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Priority Setting in the Coming Decade [1]

(Survey Linkage and Integration)

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Introduction

The preceding papers in this seminar have considered the environment for government statistics in the coming decade and some concepts for dealing with that environment. The discussion has focused mainly on the challenges which are likely to be associated with changing views of the public concerning appropriate functions for government, the utilization of improved computer capabilities and other technological changes, and the growing difficulties with respondents who supply the basic data for government statistics. At the same time, demands will increase for more and better statistics to meet the needs of business decisionmakers, academic and research interests, and governmental policymakers.

Many of these developments have already emerged in the last 10 years. The main response of central statistical offices has been to develop a proliferation of special-purpose studies and surveys to meet these individual demands for specific information and statistics. Many governmental statistical agencies are faced with limited budgets, a need to reconcile conflicting data series, and consequently, strong pressures to define priorities among the widely diverse statistical programs which presently exist and which are contemplated.

This paper first focuses on a series of propositions which describe the present state of affairs facing most central statistical offices. It then discusses approaches to setting priorities. In view of the pressures on statistical offices that are discussed in the first part of this paper, it is unlikely that the entire range of national statistical programs can be fully rationalized and that an integrated set of priorities can be applied to all statistical efforts. Distortions and imbalances are likely to remain. This paper outlines an approach for setting priorities in selected categories of general-purpose economic and social statistics.

For economic statistics, the national income accounts provide a useful basis for setting priorities among the statistical series that serve as the basis for estimates of the various components. By analysis of the differences between preliminary estimates and final estimates based upon more complete data, it is possible to identify those areas which need improvement in relation to current estimates. The costs of those improvements can then be compared on the basis of resulting reduction in estimating error to establish priorities concerning individual contributing series.

In the area of social statistics, an integrating framework does not exist. Hence, the task is much more difficult. As the subtitle implies, this paper proposes an approach for integrating major social surveys. The approach is possible in the United States because a recently authorized mid-decade census offers a flexible potential for comprehensive integration of special-purpose social surveys for statistical purposes. In effect, a mid-decade statistical effort is proposed in which a series of "nested" surveys would provide a common set of demographic characteristics to serve as the basis for statistical matching of detailed information collected concerning specific characteristics. With

[1] This paper was prepared for the Economic Commission of Europe Seminar on "Statistics in the Coming Decade," Conference of European Statisticians, Washington, D.C. March 21–25, 1977.

this approach, priorities for special-purpose social surveys would be established on the basis of their contribution to the overall integrated demographic and social statistics system.

It is intended to set forth a strategy which can be helpful to central statistical offices in meeting the problems which have been addressed in earlier sessions. While this paper offers a potential approach to the difficult task of setting priorities for major governmental statistical programs, it is not intended to predict the processes which will be implemented in all countries nor does it attempt to foresee the new forces that will impact on statistical programs in the decade ahead.

Difficulties of Priority Setting

For the past several decades, the central statistical offices of most countries have attempted to outline rational programs of statistical development. These efforts have required explicit allocation of scarce financial and professional resources to the tasks which meet the most important needs. In a widely distributed report, *Setting Statistical Priorities,* the Committee on National Statistics of the National Academy of Sciences in the United States recently discussed the problems of priority setting.

The essential recommendation of this report was that "the assignment of priorities among data packages and programs should involve an explicit consideration of anticipated benefits and costs." The Committee on National Statistics' report discusses approaches for overcoming the limitations of classical cost/benefit analysis techniques when addressing the issue of setting statistical priorities. The basic recommendation was backed up with supporting recommendations that encouraged:

1. The establishment of technical groups to undertake such analysis,
2. The expansion of research on measuring benefits and costs of data programs, and
3. The centralization of statistical activity for specific functional areas so that there would be an informed determination of needs and priorities.

The supporting recommendations or related actions are required because the central statistical offices are faced with the practical difficulty that the benefits of individual statistical activities are frequently hard to identify, especially in terms of secondary and tertiary impacts. For example, the use of national income accounting estimates is so widespread among governmental and nongovernmental groups that it is virtually impossible to measure the benefit of improved estimates of national income or to evaluate the detrimental effect of decisions based upon inadequate series. This task is made more difficult since the relative importance of different sectors of the economic structure varies considerably depending upon the stage and the particular characteristics of current business cycle developments. Likewise, the central statistical office is often unable to measure the full cost of gathering various statistics since the direct costs to governmental agencies do not reflect the burden of the recordkeeping requirements or reporting demands on respondents who supply the data. If the required information is not readily available, these additional costs can be very high.

Other techniques used by the central statistical offices include analysis of *program management impact.*[2] Under this approach the statistical program is considered as a part of the program management associated with specific governmental programs. Another approach is the recognition that certain governmental priorities determined by legislation demand priority statistical activities. These *legislated priorities* often absorb a significant portion of the statistical budget without having any relationship to related or allied statistical programs.

Most of the development of the statistical activities has been a product of incremental improvements to individual series after they have been established or by episodic emphasis on statistics in areas of immediate or growing public concern. Before proceeding to discuss means of improving this process in the coming decade, it may be helpful to set forth some propositions concerning the considerations which face central statistical offices.

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[2] These additional categories are discussed more completely in a paper presented at the 40th Session (1975) of the International Statistical Institute in Warsaw, Poland. See Joseph W. Duncan, "Developing Plans and Setting Priorities in Statistical Systems," *ISI Contributed Papers,* pages 245–253.

Part I: Some Propositions Concerning Pressures On Central Statistical Offices

In establishing priorities among statistical programs, one must recognize that there are several basic pressures which are continually placed on the statistical policymaker. Some of these are:

1. Every statistical series has users who exert pressure for continuation of ongoing efforts;
2. Legislation is typically designed to focus on specific (but inconsistent) target groups;
3. As policymakers and program managers demand more precise data, the impact on the providers of data multiplies in complexity and magnitude;
4. Both crisis management and new policies yield pressure for quick response by the statistical agencies, reducing opportunities for adequate coordination; and
5. With growing sophistication of social service delivery, there is increasing demand for greater geographic and demographic detail for established data series.

A brief review of each of these propositions is presented below as background to the concluding section which outlines one approach to improved priority setting.

1. *Every Statistical Series Generates Users.*—Once a statistical series is published by the government, a variety of policymakers and business and academic analysts begin to determine what utility individual estimates have for them. Inevitably, certain insights are drawn and, over time, a continuing analysis of those series is undertaken by affected groups. Even though the demographic or other conditions relating to the series may change considerably, there remains considerable pressure to maintain old and familiar series.

For example, the concept of a family composed of a working male with a dependent wife and two relatively young children, as descriptive of the typical household, may have characterized a large number of households at one point in time. The emergence of secondary and tertiary wage earners, combined with greater variation in living arrangements, has resulted in a considerable change in the character of households.[3] Nevertheless, the old stereotype continues as a statistical and social reference point in the United States, being used for statistical series concerning real income levels and as a basis for estimates of social programs. A central statistical office which sets out to define a household that approximates current household relationships is likely to encounter considerable resistance from users who are more familiar with the older definitions. Thus, users of existing series resist their abandonment even if priorities, concepts, or realities have changed.

2. *Legislative Focus On Specific Target Groups.*—Much legislation is developed to deal with specifically defined problems. For example, in the field of education, one may wish to establish programs to deal with the special problems of poor families, to enhance opportunities for gifted children, etc. These legislated activities frequently generate program-related statistics or macrostatistics which are intended to describe the problem being addressed by the program and the impact of the program on improving the condition of the specific target group. The affected groups may frequently overlap. For example, a gifted child may be a member of a poor family and thereby qualify for both of the programs just mentioned. Over time, mandated statistical requirements associated with measuring each program independently lead to overlap, duplication, and confusion. The statistician's flexibility for (*a*) reducing the volume of required information in setting priorities concerning detail of coverage and (*b*) using general-purpose definitions is restricted by such legislation.

3. *Reporting Requirements Grow In Complexity.*—As individual demands for information are generated, they may appear to be perfectly reasonable, individual requests. The cumulative effect of programs with different reference dates, with different industry coverage, or with different definitions create a seri-

[3] In the United States, "for example, in March 1975, only 21% of the 71.1 million households in the United States consisted of husband-wife families in which the husband was the sole breadwinner." Source: Bureau of the Census, *Current Population Reports,* Series P-20, Number 291, Table B (for number of households) and Bureau of Labor Statistics, *Special Labor Force Report,* Number 183, Table M (for number of husband-wife families with the (male) head employed and the sole breadwinner).

ous impact on the respondent. His reluctance to meet the unique requirements of individual statistical programs increases with each request. Hence, what may appear to be appropriate from a limited program management perspective, may be highly inappropriate from the standpoint of developing compatible statistical results that minimize burden on the respondent.

In the United States this problem is further complicated by a recent tendency to substitute statistical collection for direct regulation. The philosophy is that if institutions, individuals, or corporations are required to report data concerning such activities as equal employment hiring, the requirement to submit data will force institutions to reconsider discriminatory practices, having an effect similar to direct regulation. The reporting burden associated with such universal inquiries generates frustration and resistance among the providers of statistical information and may, in fact, be detrimental to the accomplishment of the original policy objectives. In summary, as data requests expand, the effect on respondents multiplies in impact, thus generating widespread resistance.

4. *Crisis Management and New Policy Generates Pressure for Quick Response; Little Coordination.*—A recent example of this problem in the United States related to the energy crisis of 1974, in which there was an immediate demand for improved information concerning resources and uses of alternative forms of energy. The governmental role in energy regulation was relatively limited before the energy crisis. Hence, existing data in the United States (and also in most developed countries) did not meet the demands associated with fully understanding energy problems and alternatives. With the 1974 energy crisis, many crash efforts were undertaken to generate new series of data to meet the immediate policy needs. Unfortunately, this resulted in the establishment of duplicative reporting requirements and the introduction of conflicting definitions. Statistical programs frequently originate under such conditions and, as a consequence, time for appropriate coordination or priority setting is not allowed. In the end, the programs developed may be less appropriate than would have been achieved under better coordinated conditions.

5. *Increasing Geographic Detail Is Needed.*—As the complexity of social service programs has increased in recent years, it has been recognized that there are substantially different needs for families living in rural areas, small towns, or urban concentrations. These differences are especially important as there is a national goal of equity in benefits accompanied by a desire to shift program administration to the local areas. Cost-of-living estimates that apply to a nation as a whole cannot be expected to reflect the unique conditions of smaller geographic areas. Also, as program responsibilities are decentralized to the local level, there is a growing demand for increasing geographic detail in statistics. Since the development of local area estimates is considerably more expensive than the development of national estimates, a high percentage of the national statistical budget may be required to develop only a few local level measures.

These propositions concerning the recent context of priority setting are likely to continue to be important in the coming decade. Consequently, pressures for maintaining special-purpose programs are inevitable, and it will be difficult to fully overcome the fragmentation of statistical efforts which has characterized the last two decades.

Part II: Approaches to the Setting of Priorities

In the following sections separate views will be presented concerning approaches to the setting of priorities among programs affecting macroeconomic statistics and programs designed to yield social statistics.

INTEGRATION OF ECONOMIC STATISTICS

In the 1970's most developed countries have produced an impressive variety of economic statistics to describe both current and longer term developments with sufficient detail so that the economic policy analyst can generally understand current conditions in the national economy. Neverhteless, there are difficulties since comprehensive and accurate measures often are available only after considerable time delay. Thus, there are frequent revisions in preliminary estimates of national income and related measures as more complete information becomes available.

This difficulty is further complicated by the fact that current estimates frequently are based

on partial information that may be collected using widely diverse methodological concepts or definitions of industry sectors or consumer groups.

A vital factor in improving economic information is the standardization of classifications and definitions for key series. When the input of wages or materials for one industry sector is collected using a concept different from that used for estimates to measure output, there are great difficulties in developing accurate estimates of such items of productivity and value added.

The national income accounting concepts provide a refined framework of economic data collection. The key to improved economic information is the integration of data collection efforts that provide input to the national income accounts with the accounts themselves. Considerable progress has been made in recent years, but it is anticipated that during the coming decade even further improvement will be achieved.

In the United States, for example, we expect that the industrial directory concept (which provides a complete listing of firms by industrial category, size, and location) will lead to the development of integrated samples yielding consistent estimates of the wide variety of inputs and outputs which characterize economic activity. Further, intensive reviews of recordkeeping practices in businesses and institutions will lead to improved comparability in the information provided by respondents. Finally, improved economic models are already being developed to understand such things as the sources and uses of energy, the cumulative effect of point estimates of environmental impacts, and even such a refined concept as the quality of life, to the extent that it can be measured.

Setting Priorities.—In this context, the setting of priorities is greatly simplified. The national income accounts (NIA) provide a framework for data collection, and the industrial directory, improved models, and better classifications provide tools for achieving improved economic statistics. Using the NIA framework, it is impossible to identify gaps in current information and to devise programs to meet those gaps. Then, by examining the impact of specific NIA item estimates on overall results, it is possible to determine overall benefits to be achieved by the new programs in relation to the overall costs of the statistical effort.[4]

The approach is straightforward. First, an analysis is made of the differences which are observed between preliminary estimates and final estimates of components of national income and product accounts. The sources of the preliminary estimates are then examined to determine causes of error and to identify alternative collection procedures. It is possible to set priorities among suggested improvements by comparing the contribution to error reduction in overall estimates of national income with the cost and reporting burden associated with the proposed improvement.

International Concerns.—In economic accounts the need for greater comparability in trade statistics and measures for cost of living will grow in importance. These needs may not be resolved during the coming decade, however, it is likely there will be a considerable effort devoted to developing concepts for improving these measures and for standardizing the international statistics in these important areas.[5]

Unmet Needs.—It is unlikely that the national income accounts will be substantially revised in the coming decade although considerable work on this topic is likely to be undertaken. By the end of the 1980's, however, one would expect that the basic concepts of the national income accounts would be revised to more fully reflect the environmental and energy shortage conditions which are likely to be evident on a global scale. Further, the growing interdependence of multinational corporations and multinational trade compacts will have created difficult problems for data collection. International statistical organizations, such as the United Nations Statistical Office, must be greatly strengthened in order to yield significant achievements in these difficult areas and to aid national statistical offices in setting appropriate priorities.

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[4] A recent attempt by the United States to provide such analysis is the Gross National Product Data Improvement Project. The results of this study will be published in a few months.

[5] See Irving B. Kravis, et al., *A System of International Comparisons of Gross Product and Purchasing Power,* Johns Hopkins Press, 1975.

INTEGRATION OF SOCIAL STATISTICS

The problems of economic statistics are less difficult than those associated with social statistics in the coming decade. The national income accounts have now been under development and in use for over three decades. Hence, the framework, even though controversial, is widely accepted so that measures of economic performance are presently being developed in a comparable mode, for example, the System of National Accounts (SNA) of the United Nations. Even though there has been nearly a decade of effort devoted to developing a system of social statistics, there is no comparable theory or conceptual agreement in this area.[6]

The major area of international agreement relates to the central role of demographic censuses in meeting the fundamental requirements for social statistics. This agreement has recently been augmented, under United Nations leadership, by a growing focus on multipurpose sample surveys in years between censuses. Nevertheless, it is clear when one compares the social indicators publications of various countries that the state-of-the-art of social measurement is relatively primitive and, furthermore, that there is no integrating concept or philosophy concerning the development of social statistics. Hence, unlike the economic statistician, who has a major aid to integration in the national income accounting framework, the social statistician has less overall guidance.

Nested Surveys.—In the United States the 94th Congress authorized (in 1976) a mid-decade census. Although this census will not take place until 1985, considerable work must be done prior to that time. Hence, the concept being presented here is somewhat speculative since it represents an idea of the Statistical Policy Division of the Office of Management and Budget, nor a fully accepted point of view of the U.S. Federal Statistical System. Further, it should be emphasized that the efforts of other countries may prove more fruitful and that the results of this conference may generate alternative views which may be more useful for establishing priorities of central statistical offices for the development of social statistics.

The proposed approach is to utilize the mid-decade census as a mid-decade statistical effort which would develop social and demographic statistics needed for various formula grant programs of the Federal Government in allocating funds to the different regions, States, and sub-State areas throughout the Nation. This program would refine the special-purpose local area surveys which were designed to satisfy individual program needs as discussed earlier. Most of the existing programs operate with unique concepts concerning such design features as geographic coverage and definition of covered households or individuals. Following the 1980 census, it should be possible to define a set of common characteristics for these individual programs and to initiate a general revision of the special-purpose surveys so that they achieve relatively similar coverage and use similar concepts at the national level. The mid-decade statistical effort could then be used to develop the local area information required for individual special-purpose topics.

In effect, this would create a series of "nested" surveys in which a common set of information would be collected for all populations sampled, but the detailed characteristics explored would vary greatly among the different survey samples. This detailed information would be related to the ongoing annual surveys that presently exist. This would require making sure that the concepts and the universe covered by the periodic special-purpose surveys are the same as those used for the mid-decade statistical effort. It would also require developing a data file following the 1985 statistical effort in which households with common characteristics would be statistically matched to yield a statistical profile of various functional areas even though individual families were not questioned concerning all specific subject matter aspects. This would provide analysts with a very rich resource to investigate interactions among various programs.

In the United States we have identified a number of programs which are now used to give local area estimates and which could be redirected to merge with a mid-decade statistical effort. For example, the demographic portion of the Census of Agriculture could be substantially reduced and the mid-decade program could yield much better data on the total rural population. The metropolitan detail (60 cities cov-

[6] "Towards a System for Social and Demographic Statistics," ST/ESA/STAT/SER.F/18, New York, United Nations, 1975.

ered once every three years) in the Annual Housing Survey could be dropped in order to obtain housing data for all 276 Standard Metropolitan Statistical Areas once every five years. When such revisions are accumulated over the period of the entire decade, our analysis shows that it is possible to offset the cost of the mid-decade statistical effort. Thus, for the same total expenditure, a totally integrated set of social and demographic data can be achieved.

Under this concept, the key to integrating social statistics becomes the use of common demographic and subject classifications for individual special-purpose surveys. The tools for developing integrated statistics in the social area include the expansion of multipurpose surveys, the use of a mid-decade "nested" survey approach, and the development of data files based on statistical matching of data from the mid-decade statistical effort and the annual special-purpose surveys.

Setting Priorities.—Under this program, priorities on the individual statistical programs will be determined by first relating the topics of special-purpose surveys to programmatic needs and second by concentrating on expansion of those programs which make the contribution to the integrated data set. The primary impact of this approach on budget setting during the 1980's would be to restrict the geographic coverage of limited special-purpose surveys and to utilize the mid-decade statistical effort to generate appropriate mid-decade estimates for small areas.

Budget resources would be restricted for proposed special-purpose social surveys which did not utilize a sampling frame that is compatible with the mid-decade statistical effort. Ultimately the data set based upon statistical matched samples would be compared with decennial census results to determine error terms and needed improvements, much in the same way proposed earlier for setting priorities on components of national income.

This approach also places a high priority on research on data linkage based on statistical matching and the concept of defining linking elements, an effort which must take place in the early years of the decade. In fact, the 1978 budget for the U.S. Bureau of Census includes some research funds for initial exploration of this topic.

International Problems.—A current example of this concept in a limited sense is the World Fertility Survey in which there is an attempt to influence different nations in the use of similar concepts and to refine individual questions to meet local conditions, yet to derive information which is internationally comparable. The multipurpose survey approach of the United Nations, at this time, is designed fundamentally to encourage individual nations to meet many purposes with their sample surveys and thus to generate a richer base of social data for individual countries.

During the next decade some agreement at the international level must be reached concerning the concepts and classifications to be used and the overall framework within which the multipurpose surveys are developed. Unfortunately, in the absence of a well accepted system of social and demographic statistics, it is difficult to implement this approach on an international basis. Hence, the integrated international approach to social statistics is likely to be possible only in the 1990's after much more specific experience is gained with concepts and implementation such as is anticipated in the United States.

Unmet Needs.—It is evident that the major unmet need in the area of social statistics is a clearly articulated social theory. Given the differing cultural conditions of individual countries, it is unlikely that a universally applicable theory can be developed. An improved and integrated data base for individual countries, such as will be possible by the approach outlined above, may assist in the development of concepts that will lead to improved data comparability.

Summary

This paper has attempted to present a series of propositions which underscore the importance of special-purpose programs in the ongoing operations of statistical offices. At the same time, it has attempted to set forth an approach for using national income accounting and linked or "nested" demographic surveys for achieving more integrated economic and social statistics.

This paper does not attempt to predict specific developments in the coming decade, but

rather it has attempted to outline an approach which may be in growing use by central statistical offices in the 1980's in approaching the difficult task of setting priorities.

In the last analysis, priority setting for statistical surveys must be responsive to the emerging informational requirements of our complex and rapidly changing societies. Many of these requirements cannot be anticipated. We must therefore recognize, as our *first* priority, the need to develop a capability for information collection and analysis which has sufficient flexibility to respond effectively to the information needs which arise in the future.

A Framework for Planning U.S. Federal Statistics, 1978–1989

(Draft Chapters)

LABOR STATISTICS

Uses and Users

The labor statistics[1] program of the U.S. Government is designed to provide macro-economic indicators for use in the evaluation and formulation of public policy, in the implementation of public laws, in the analysis of the workings of the labor market processes, and industry and area data for use in the development of an overall and comprehensive set of labor market information for use by regional, state, and local government officials as well as by labor and management and the academic communities.

The need for a comprehensive system of labor statistics has been annunciated in the Comprehensive Employment and Training Act (29 U.S.C. 882) which provides "the Secretary shall develop a comprehensive system of labor market information on a national, state, local, or other appropriate basis, which shall be made publicly available in a timely fashion." That statute also provides for "the use of selected sample surveys, to produce more statistically accurate data on unemployment, underemployment and labor demand by state, local and poverty areas." In addition, 29 U.S.C. 882 requires data for unemployment, labor force participation, involuntary part-time employment, and full-time employment at less than poverty wages in the Nation. This expression of need is a restatement of the mandate contained in the 1888 law creating the Bureau of Labor Statistics and in subsequent legislation. For example, in 1913 37 Stat. 737 (29 U.S.C. 2) provided for the collection, collation and reporting of "full and complete statistics of the conditions of labor and the products and distribution of the same . . . for all . . . industries throughout the United States and also by States. . ." Employment, wages and hours by industry were specifically mentioned in the 1913 statute. In 1940, productivity and labor costs were added to the statutory mandate (29 U.S.C. 2b).

In addition, the National Science Foundation is required by law to "maintain a current register of scientific and technical personnel, and in other ways to provide a central clearinghouse for the collection, interpretation, and analysis of data on the availability of, and the current and projected need for, scientific and technical resources in the United States, and to provide a source of information for policy formulation by other agencies of the Federal government."

The basic labor statistics of the United States are regularly used by the Joint Economic Committee of the Congress, the House and Senate Labor Committees, House and Senate Public Works Committee, the Congressional Budget Office, as well as a number of other committees established on either a standing or special basis.

[1] Occupational safety and health programs are excluded from the following discussion of labor statistics. A discussion of those programs is to be found in the chapter on the environment.

EDITOR'S NOTE

In previous issues of *Statistical Reporter* there have been several discussions of the planning process associated with preparing *A Framework for Planning U.S. Federal Statistics, 1978–1989*. The text of the Framework is in the process of being prepared and reviewed by the Federal statistical agencies. A revised draft will be the subject of public review and comment during 1977. Since this material is presented here in preliminary form, it should not be viewed as representing decisions concerning policy matters.

Selected drafts of various sections of the Framework will appear in *Statistical Reporter* during the coming months. While preliminary in nature, these drafts will be published in order to facilitate wide review of the materials. The following chapters are published in this issue: Labor Statistics, Production and Distribution Statistics, Statistics on the Environment and on Occupational Health and Safety, Civil Rights Data, Professional Staffing and Professional Staff Training, and Interagency Funding. The following chapters have appeared in previous issues: Price Statistics (March 1977); Criminal Justice Statistics (February 1977); Confidentiality of Statistical and Research Data (January 1977); User Access—Data Banks (December 1976); Federal-State Cooperative Systems of Data Collection (November 1976); Long-Term Economic Growth Models (October 1976); Section I—The Nature of the Plan (September 1976). For a full outline of the overall Framework, see pages 207–209 of *Statistical Reporter* for May 1976.

For background statements on the planning process, see Joseph W. Duncan, "Developing Better Long-Range Plans for Federal Statistics," *Statistical Reporter*, No. 75–4, October 1974; Robert W. Raynsford, "The Interagency Statistical Planning Effort, 1975," *Statistical Reporter*, No. 76–3, September, 1975; and Paul O'Neill, "OMB's Role in Planning and Coordination of Federal Statistics," *Statistical Reporter*, No. 76–11, May 1976.

Comments on these materials should be sent to the Statistical Policy Division, Office of Management and Budget, 726 Jackson Place, N.W., Washington, D.C. 20503.

Within the executive branch the data are used by virtually every Department in preparing economic impact statements, in letting contracts covered by either the Davis-Bacon or the Service Contracts Acts, and in making recommendations respecting future public policy. The data are specifically used by the Council of Economic Advisors, the Economic Policy Group, and by the Departments of Labor and Commerce, among others, charged with distributing Federal resources on the basis of formulas which include labor force components. Further, the Federal Mediation and Conciliation Service uses occupational wage rate and hours data, average hourly earnings data, and other information about wages and hours in their mediation efforts. The Council on Wage and Price Stability uses all of the data series, but particularly those relating to occupational and nonoccupational wages and benefits, earnings, hours, and productivity. The Office of Management and Budget uses labor force and unemployment data in making projections about the impact of the Federal budget and of fiscal policy. The Federal Reserve Board uses labor statistics data in their analysis of the impact of alternative monetary policies. The Bureau of Economic Analysis uses labor statistics data as inputs into the economic accounts. Moreover, a comprehensive set of labor statistics is required to evaluate various tax proposals, relating both to individuals and to businesses, to evaluate the appropriateness of the minimum wage and hour standards established under the Fair Labor Standards Act, to analyze the combined effects of the private pension system and the Social Security and Railroad Retirement systems, the interaction between federally sponsored health programs such as medicare and private programs (most of the coverage under which results from an employment related situation), the adequacy of unemployment benefits and the interrelationship between unemployment benefits and supplemental unemployment and other benefits provided by or through employers.

In the private sector, the data are used by labor and management for collective bargaining, by business in formulating business strategies, and by academics in their analyses of the functioning of the economy and the relationship and interrelationship of the various components in the economy. State and local governments use the data in much the same way as does the Federal government. In addition, State and local governments use labor statistics in the implementation of numerous Federal and State programs including the unemployment insurance program. Private sector and State and local jurisdictions use national and local area labor statistics in developing affirmative action plans and these sectors and the Federal Government use the data in evaluating the plans so developed. Further, both the Federal Government and State and local governments use occupational wage rate data at the local level in the process in establishing pay plans for their employees. The Federal Government also uses

selected national level occupational wage data in the process of setting most Federal pay scales.

Advisory Groups

The Department of Labor's Bureau of Labor Statistics (BLS) is the principal Federal agency involved in the collection and analysis of labor statistics as such. Its principal advisory groups are the Labor Research Advisory Council and Business Research Advisory Council. Both these councils advise the Bureau on needs for new series and on methodology. The Bureau also receives advice, on a time-to-time basis from advisory panels convened to consider a single major aspect of labor statistics. A major effort of this nature, for example, was that of the President's Committee to Appraise Employment and Unemployment Statistics which was established in 1961 on the recommendation of the Secretary of Labor.

In addition, the Bureau annually sponsors a meeting of State, local, and foreign governments and with other labor economists and statisticians to discuss programs, techniques, and emerging programs. The Bureau also receives advice from the professional associations such as the American Statistical Association, the Industrial Relations Research Association, and the American Economic Association as well as from such organizations as the Federal Statistics Users' Conference, the National Bureau of Economic Research and the Interstate Conference of Employment Security Agencies both by participating in meetings that these organizations sponsor as well as through other formal and informal contacts.

At present there is no standing advisory committee whose sole function is to advise on statistical methodology and procedure and on changes in the state of the art respecting statistical processing. Notwithstanding the government's expertise in this area, and particularly that of the BLS and the Bureau of the Census, new techniques and methods are developed by private sector units (most notably by the academic community but also by private consulting firms and by other business organizations). Moreover, the statistical methods and procedures employed by the statistical agencies should regularly be subject to the thorough review by outside recognized experts acting in a consultative role.[2] Such a review would at least assure that the procedures employed are not being employed simply because they are in place. In addition, such a committee could routinely review the concepts underlying each data series and either suggest appropriate changes or add weight to the signals suggesting the need for a full-scale review of such concepts.

In large part, the need for such independent review in a major area will be met, though on a one-time basis by a new National Commission on Employment and Unemployment Statistics, established under Public Law 94-444 whose mandate is to:

> "(1) identify the needs of the Nation for labor force statistics and assess the extent to which current procedures, concepts, and methodology in the collection, analysis, and presentation of such statistics constitute a comprehensive, reliable, timely, and consistent system of measuring employment and unemployment and indicating trends therein; and
>
> "(2) conduct or provide (through contract with institutions, organizations, and individuals, or appropriate Federal or State agencies, or otherwise) for such studies, hearings, research, or other activities as it deems necessary to enable it to formulate appropriate recommendations."

The Commission, according to the Act, is to report its findings and recommendations to the President and the Congress within 18 months after the date of appointment of the first five (of the nine) members of the Commission.

"In preparing its report, the Commission shall consider the following:

> "(A) The methodology of collection of employment and unemployment data at all levels, including National, regional, State, and local statistics.

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[2] The statistical agencies do have outside groups and organizations review their procedures and methodologies. For example, the BLS is now cooperating with the National Bureau of Economic Research which is examining the Wholesale Price Index under a contract from the Council on Wage and Price Stability (COWPS). Before letting the contract, the COWPS and BLS agreed on the need and desirability of the NBER review.

"(B) The methodology of analysis of such data, including its relevance and application.

"(C) The methodology of presentation of employment and unemployment statistics, including the dissemination, current utilization, and application of such statistics.

"(D) Alternative methods of such collection, analysis, and presentation.

"(E) The need for additional special statistical surveys (including longitudinal studies) and reports on a continuing basis.

"(F) The need for additional data and analysis on job vacancies, job turnover, job matching, discouraged workers, part-time workers, youth, minorities, women, and other labor force participants.

"(G) Accuracy and uniformity of seasonal adjustments in all categories of labor force statistics.

"(H) Methods of achieving current, accurate, and uniform employment and unemployment statistics on a State and local basis, including their use as a determinant of the allocation of Federal assistance.

"(I) The need for, and methods to obtain, data relating employment status and earnings, economic hardship, and family support obligations.

"(J) The extent to which employment and earnings data assist in determining the impact of public programs and policies upon persons who are economically disadvantaged, unemployed, or underemployed.

"(K) The availability of and need for periodic information on education and training enrollments and completions in the public and private sectors.

"(L) Statistical indicators of the relationship between education and training and subsequent employment, earnings, and unemployment experience.

"(M) The value and usefulness of other statistics regarding employment and unemployment, such as those obtained through operation of the unemployment assurance system.

"(N) The availability of and need for current and projected occupational information, particularly on a local basis, to assist youths and adults in making training, education, and career choices.

"(O) Such other matters as the Commission deems appropriate or necessary, including such matters as are suggested by the President or by the Congress that the Commission deems appropriate."

Data Requirements

To meet the needs for information about labor, there should be a comprehensive system of labor statistics which includes an integrated information set at the national, regional, state, and local area levels. Such an integrated data set should provide information on the labor force and its composition, the number of workers employed by occupation, industry, and area, and the number of hours worked and hours paid for and wages paid for that work together with the benefits received in addition to wages, and the expenditures made by employers for wages and benefits combined. In addition, a comprehensive system should include information about the annual earnings of workers from all employers and from each industry in which they were employed, the prevalence of collective bargaining, wages, earnings, and benefits as well as on work stoppages and labor turnover. Data about the utilization of labor without information about the output of labor is incomplete. Information about labor output and the unit labor cost of producing the goods and services are necessary to an overall evaluation of the economic well-being of the country. Furthermore, as output can be increased without greater efforts on the part of labor, data are also needed on total factor output and total factor cost.

Core Programs

1. The principal labor statistics programs conducted by the Department of Labor's BLS and by the Employment and Train-

ing Administration are listed and described in:

a. *Major Programs/Bureau of Labor Statistics.* The latest published edition is for 1976. The methodology used by the Bureau in collecting and analyzing data, by program, and the Bureau's publication of these data is also described in *BLS Handbook of Methods,* Bulletin 1910.

b. *Summary of Employment Security Statistical Reports.* The latest published edition is for 1975. This publication describes the programs, uses, users, and publications.

2. Data on agricultural employment, wages and hours by state and by type of work are compiled quarterly by the Department of Agriculture's Statistical Reporting Service. The data are published in its report *Farm Labor* which also contains a statement on the source and reliability of estimates. Annual data on earnings and days worked by hired farmworkers demographic characteristic and migrant-nonmigrant status are published in *Hired Farm Working Force.*

3. Information about Federal Government employment and payrolls is compiled by the Civil Service Commission and published each month in its monthly release of *Federal Civilian Manpower Statistics.* More detailed information is also published in the Commission's *Annual Report, Pay Structures of the Federal Civil Service,* and other Commission reports. The Commission also annually publishes data, based on a joint Federal-State survey, on salaries in 31 administrative, professional, or technical occupational categories in State governments. These data are published in the Commission's *State Salary Survey,* the most recent edition of which provides data as of August 1, 1975.

4. The Department of Defense annually publishes data in its *Selected Manpower Statistics of the Department of Defense* showing the number of active-duty military, civilian, and reserve forces by branch of service. Monthly summaries are also published.

5. The National Science Foundation conducts studies (through the Bureau of the Census) of manpower characteristics (employment, professional characteristics, and work activities) and scientists and engineers. Data are published in *Science Resource Studies Highlights* and in the NSF series *Surveys of Science Resources.* It also compiles and maintains a register of receipts of doctoral degrees in all fields. The data so compiled are published, in statistical form, from time-to-time.

6. The Maritime Administration, Department of Commerce, compiles and publishes monthly data on areas of employment and maritime manpower in its *Merchant Marine Data Sheet.*

7. The National Center for Education Statistics, Department of Health, Education, and Welfare, compiles and annually publishes data on the number of teachers at the elementary, secondary, and higher education levels and staffing in local public school systems of various size. Every 5 years, the Center provides like information on nonpublic elementary and secondary schools, and on occasion provides data on the number and characteristics of employees in institutions of higher education.

8. The Law Enforcement Assistance Administration, Department of Justice, annually publishes employment data for the policy, judicial, prosecution, legal defense and corrections sectors of the criminal justice system for State, local, and Federal levels of government in *Expenditure and Employment Data for the Criminal Justice System.*

9. The Federal Bureau of Investigation, Department of Justice, publishes data on law enforcement employees by agency and population size group in its *Annual Crime Report.*

10. The Labor-Management Services Administration (LMSA), Department of Labor, compiles and publishes data on union fi-

nancial statistics, and on the characteristics of welfare and pension plans. (The BLS also has programs in this area which complement those of LMSA and of SSA.)

11. The Social Security Administration (SSA) periodically publishes data on the annual earnings of workers covered by Social Security by area in which major earnings were received. SSA also makes public-use tapes available that permit more detailed analysis of the earnings data, by age, race, sex, industry, locality and quarters of earnings. SSA also compiles and publishes data on employment on various related income maintenance and related programs such as on income-loss protection against sickness, private health insurance and employment benefit plans in addition to information directly relating to the Social Security system.

12. The Equal Employment Opportunity Commission compiles and publishes data on the number of women, and other minority employees by broad job category, industry, (including State and local governments), and locality.

13. The Interstate Commerce Commission compiles and publishes employment statistics for rail carriers, motor carriers, water carriers, oil pipelines and others covered by the Interstate Commerce Act in its annual publication Transport Statistics in the United States. In addition, ICC publishes employment information in its quarterly Transport Economics.

14. The Railroad Retirement Board compiles and publishes data on characteristics of employees and of beneficiaries in the railroad retirement system. Data published annually in *Service and Taxable Compensation of Railroad Employees* includes summaries of employees' service and taxable compensation in Railroad Retirement Act covered service, number of employees by class of employer, occupation, and months of service in a single year.

15. The Bureau of the Census publishes a significant quantity of labor statistics as a result of its work with the Current Population Survey and as important parts of its publications on the decennial census of population and housing and the quinquennial censuses of agricultural, business, and governments. In addition to hard copy publications, the Bureau of the Census also makes data available through public-use computer tapes.

Data Issues

One of the Federal Government's primary concerns is the assessing of the Nation's economy. Since our economy is a dynamic one, with constant changes occurring in the labor market and industry mix, the data requirements of the Federal Government are also constantly changing and need to be reexamined. This is particularly true as new training and assistance programs are mounted or phased down and as the economic environment changes. This means that periodically there arises a gap in the Federal Government's data system, some of which are discussed below. The existance of a gap does not, however, automatically mean that the Federal Government should mount a data collection program to fill the breach. If the statistical matters discussed below are determined to be necessary to Federal program or policy then a specific justification in terms of the program or policy purpose to be served will be required in the normal course of program and budget review before any work should be undertaken to fill the perceived gap.

One of the most pervasive problems is the lack of an integrated comprehensive data set that provides for an integration of analysis based on the same sample frames in the same areas. This is not to say that data for each series automatically needs to be obtained for each area covered by every other series at the same time. It does mean that if employment hours and earnings surveys (hereafter referred to as the base program) are conducted so as to obtain area level data in X areas then other surveys designed to obtain area level detail should be conducted in only those areas that are included in the base program. Unless there is a specific programmatic requirement for data in an area not covered by the base program, all other study programs should then be conducted with reference to cities or areas already included in the base and in each subsequent survey program so that the fullest range of data will be available for the

same areas. This observation should not be construed as a denigration of the need for better and more comprehensive national level data. Improvements in data for States and local areas will result in improved national level data if the improvement program is so designed. Moreover, the need for more comprehensive data at the national level is such so that if resources are not available to improve subnational data, then to the extent resources are available, the national level data should be made more comprehensive and integratable.

The second most prevasive problem is the absence of a comprehensive integrated set of statistics on wages and benefits. Integrated data on the distribution of all workers by demographic characteristics, industry, area, occupation, wage rates, hours worked and hours paid for, weekly earnings, and benefits are not available from any source. Such data are needed for a multitude of purposes. If resources are available, and collection is feasible, data collected on the basis of a sufficiently large sample of employers would provide information about trends and levels that might replace virtually all industry, area PATC (Professional, Administrative, Technical and Clerical) wage surveys, and studies of the structure and level of compensation. Moreover, such an integrated study, based on a large annual sample (relating to say June or September) to obtain levels and smaller samples in the other quarters to collect trend data would provide the basis of an analytic evaluation of both the level of benefits and their cost which may shed light on the potential for further public policy action in benefit areas, if required.

Labor Force, Employment, and Unemployment.— There is a need for detailed labor force data for each State, Standard Metropolitan Statistical Areas (SMSAs), and for each of the remaining counties in each State for use in allocating Federal funds under various laws including the Comprehensive Employment and Training Act and the Local Public Works Employment Act (the second title of which also provides for General Revenue Sharing allocations on the basis of a formula the principle component of which is the unemployment rate), for use in program evaluations and for economic analysis and public policy formulation at the National, State, and local governmental levels. The Current Population Survey (CPS) as presently designed, does not and will not provide data for all counties or even all SMSAs. There are other data sources and techniques, subsequently discussed, which can serve this need.

While the CPS sample could be expanded to provide county level labor force estimates, the cost of collecting reliable data for each county would be prohibitive. Moreover, unemployment insurance records tabulated by county of residence, and benchmarked to higher geographic level CPS controls do provide the basis for county level labor force estimates. Not all administrative record data are processed by county of residence (the CPS concept), and not all of those receiving U.I. benefits are unemployed (some receive wages that are within the "disregard" level contained in virtually all state laws). These administrative records should be adapted for use in the statistical construction of estimates of the labor force and of unemployment consistent with the CPS definitions. This process has begun by BLS and it is hoped that it will shortly be completed. In addition, new analytic techniques including regression estimation methods, which could utilize both administrative and survey data, are being and should continue to be throughly investigated. To utilize these records in developing labor force estimates, monthly data are also needed on the number of persons employed.

It should be noted that the BLS has recently begun a program expanding its local area data base of unemployment estimates so as to be able to provide monthly data for each State and each county as needed for program purposes. Some of these data, of course, do not meet the Bureau's usual standards of quality in that they are based on administrative records for very small areas and there are many factors which may contribute to errors in the resulting estimates. Nevertheless, the estimates are based on a conceptually consistent framework and on a conceptually consistent methodology and thus are the best estimates now available. Data at the State level and for the largest SMSAs are published monthly in *Employment and Earnings.* Data for all other areas are made available through the National Technical Information Service with appropriate caveats.

In addition the CPS frame from which the sample is selected needs to be continually

reevaluated so as to take into account sharp population shifts within an area because of the construction, conversion, or demolition of housing units, including placement of mobile homes, between censuses. It should be noted that the Bureau of the Census does take these factors into consideration in the conduct of the CPS; however, some sharp demographic shifts within areas may not be appropriately taken into account. The sharp population shifts in some areas that can arise because of the opening, expansion, or closing of a mobile home park, for example, may result in important local area changes that absent continued monitoring may result in samples and results not representative of the area as a whole. Hence reevaluation of the sample frame should be strengthened and should continue to be of very high priority.

Differences in the data on insured unemployment from the Unemployment Insurance (U.I.) system, and the CPS count of the unemployed need to be better rationalized. The addition of questions about the receipt of unemployment benefits on the CPS should be considered possibly only for those states where there appears to be a major difference between the CPS estimate of unemployment and the estimate derived on the basis of the administrative records of the State Employment Security Agencies—particularly if those estimates are higher than the CPS estimates. Such an approach may, however, affect the response rates to and the reliability of the CPS. Hence, testing of this approach through a methods test panel which has been funded in the President's fiscal year 1978 budget should be undertaken before questions about receipt of unemployment benefits are included in the CPS. Also, consideration should be given to matching studies of CPS respondents and recipients of unemployment benefits.

Further, there has been considerable discussion of the perceived need for monthly data and better data by area, on discouraged workers. Who are they, when did they last work, when did they last seek work, and why have they stopped looking for work. Only limited data on discouraged workers and only once a quarter for the Nation as a whole are now available. The addition of questions about discouragement to the monthly CPS, however, requires careful testing to assure that the basic CPS would not suffer because of either declining response or improper classification of labor force status because of the addition of questions on discouragement. In addition, other discussions have focused on the perceived need for more and better data on the underemployed, by area, and by type of underemployment. For example, do they desire full-time work but can only find part-time employment, or are they underemployed for some combination of these and other reasons (such as working below their skill capacity). This cannot be done until the problems of appropriately defining underemployment are resolved. More information also appears to be needed about the labor force participation of minority groups by areas. Many of these gaps could be filled by an expansion of the CPS sample size or by adding some questions to either the monthly core questionnaire, or utilizing a supplementary questionnaire during one or more months. The problems noted above appear to be within the charter for the new National Commission on Employment and Unemployment which, hopefully, will provide guidance in these areas.

The BLS 790 programs do not obtain reliable monthly employment data for all industries or for all SMSAs (government is particularly noticeable by its omission from published monthly series) and consideration should therefore be given to expanding the program in both monthly industrial coverage and to represent each SMSA monthly. The labor force estimates derived from the U.I. and other data should be benchmarked monthly on the basis of State and SMSA level statistics from the CPS as soon as the CPS is expanded to provide sufficiently reliable estimates. This issue area (like most of the others in labor force statistics) appears to be within the charter for the new National Commission.

Another aspect of labor force data that should be expanded is the information about the unemployed who exhaust their unemployment insurance benefits. More information on a more timely basis is needed about the demographic characteristics of the exhaustees, their prior labor force attachment, and their future labor force intentions.

The data, collected in the BLS 790 program, do not provide an unduplicated count of the employed population, because of multiple job holding, nor do they provide a count of jobs because two persons may hold the same job during

the same payroll period. Moreover, the 790 data do not provide counts (estimates) of full-time and of part-time workers. Consideration should be given to the technical feasibility and to the practical utility of obtaining such data. It seems clear that the 790 program, being based on establishment reports, is not the appropriate vehicle with which to attempt to obtain an unduplicated estimate of the employed work force. Such estimates are available from the CPS. The estimates from the two series are based on different concepts and statistical techniques and frequently differ considerably in magnitude—even after reconciliation. Work should be undertaken—perhaps by the new National Commission—towards reconciling the differing concepts, if possible. Further, and even if the estimates cannot be reconciled to sampling variability, the differences between the 790 and CPS estimates could be explained monthly in BLS publications.

The total number of unfilled jobs (i.e., job openings) by industry, occupation, area, and offered wages is not now available from any source. It should be noted that some data are available through the Employment Security Automated Reporting System operated by the State employment security agencies (SESAs) in cooperation with the U.S. Employment and Training Administration. Moreover, SESAs throughout the country are producing publications in this area. The SESA data, however, are limited by the lack of complete penetration into the job market and appear to be particularly deficient in the white collar, trade, service, and government areas.

Notwithstanding the gap in knowledge that does exist, serious attention should be given to whether a general-purpose statistical program is best suited for this purpose. Without all of the data elements noted above, a truncated data set would only provide a gross barometer of the changing availability of employment opportunities. Such a barometer is already available from The Conference Board's index of help wanted advertising. Moreover, it has been estimated that a job vacancy survey providing all of the data elements noted above—except offered wages, but providing broad regional data instead of data pertaining to job markets would cost between $20 and $50 million per year. If for program purposes the U.S. Employment Service (USES) local offices need better data on unfilled jobs, the USES could expand its local area program of employer contacts and should provide for the statistical analysis and publication of the results of these efforts—but only if the contacts made to meet the administrative need result in data that are statistically representative of the local area universe. It should be noted that the collection of job vacancy data by a statistical organization, such as BLS, would likely be under a promise of confidentiality. Such a promise would preclude the use of those data by the USES. This would occasion some duplication in effort since the USES must have vacancy data to fulfill its program mission.

Occupational Employment Statistics.—The Occupational Employment Statistics Survey (OES) program is conducted cooperatively by the Bureau of Labor Statistics and State employment security agencies. Most of the program funds come from the Employment and Training Administration, with the balance provided by State and local agencies and by the National Science Foundation (NSF). The survey is designed to provide national, state, and local data that indicate how occupational manpower resources are being utilized by industry, thereby providing a basis for estimates of future occupational employment requirements. This information is intended to be used primarily in designing manpower training programs, career counseling, and planning vocational education programs. In addition, the funds provided by NSF make possible, beginning in FY 1978, the development of national data that meets NSF needs: specifically, employment estimates of scientists, engineers, and technicians and those engaged in research and development. Presently, the OES program, designed by BLS with considerable input from the cooperating State agencies, collects data for more than 2,000 occupations by industry on a State basis. Data are also being collected for at least 29 sub-State areas by cooperating States, which currently number 35 plus the District of Columbia. (The collection of data for substate areas is done at the sole option of the State.)

The systematic approach in developing OES data at the national, state, and local levels includes the use of uniform definitions, standardized estimating procedures, and standardized occupational classifications as called for in the Educational Amendments of 1976. This makes it possible to use the data output for pur-

poses other than local education and manpower planning, for example, the analysis of geographic shifts in occupational employment by industry and the shifting patterns of occupational skills within a labor area, a State, or the Nation. The data also provide a basis for determining the availability of specific occupational skills by geographic area for industrial development and marketing research activities. Furthermore, the occupations covered include some which are generally considered to have a national labor market as well as those that have a local labor market. The OES program is designed to facilitate the development of national data and permits cooperating State agencies to modify the occupational coverage of the program, as long as it does not adversely effect the data needs of other cooperating agencies. They can add occupations for their own use, and can recommend deletion or modification of occupations from the survey. Individual States may not delete any of the core occupational components of the survey or alter definitions, without BLS concurrence. With such concurrance the changes affect all States.

The OES survey program is now conducted on a three-year cycle basis. There appears to be a consensus, however, that for many industry occupations the cycles could be spread to five years.

At present the OES program is the only source of intercensal information about the occupational composition of the employed work force. It should be noted, however, that the local labor markets vary markedly in their industrial and therefore occupational employment patterns. Moreover, much of the data required for planning state and local occupational training programs, vocational education programs, and for counseling individuals about career opportunities relate to occupations where the labor market is significantly less than national in scope and for which there is little real expectation that workers whose occupations are in surplus in an area will move far away to another area where their skills are in short supply. These observations do not denegrate the need for national level information. They do, however, point out the need for great flexibility in the collection of state and local area data to meet the needs of the particular jurisdiction—which are frequently significantly different than the data needs at the national level.

An approach toward resolving divergent national and subnational data needs on a timely basis while simulaneously reducing the reporting burden on respondents has just recently become possible. Currently the only source of comprehensive occupational data with relatively fine detail is the decennial census of population. In 1976, however, Congress authorized the conduct of a mid-decade census. While planning for that Census has not substantively begun, it is expected that occupational information, in addition to current labor force status, will be obtained in the mid-decade census. Those data plus the data from the decennial censuses will provide data on a 5-year cycle. Such data would not only shed light on the occupational composition of the employed labor force but would also provide occupational data about the unemployed labor force. In addition, it may be possible to obtain data about the occupational characteristics of those who are then out of the labor force but who had recent employment histories and who—in an emergency or under the right set of socioeconomic circumstances—might reenter the labor force. Such data elements cannot be obtained through any technique short of a censal approach.

To meet the national and area data needs it is therefore recommended that the BLS should currently continue providing state employment security officials with the necessary guidance in the OES survey including technical manuals, consultation services, sample selection techniques, editing and screening procedures, standardized questionnaires, estimating procedures, and complete processing systems. In addition, the BLS should continue to develop and improve procedures to measure current and projected occupational supply, including replacement needs, occupational mobility, data on the number of unemployed by occupation, and the extent of occupational training by private industry. The data collection aspect of the OES program as currently constituted should be terminated when the 1980 census data are available and the plans for the 1985 mid-decade effort have been sufficiently formalized to assure that the needed national data will be obtained in that effort. The census data will then replace the OES core data collection effort. Nevertheless, the BLS should continue to provide technical guidance and assistance to those States and local areas that desire to conduct an occupational employment

survey to meet a specific need not satisfied by the data from the censuses. Such studies, however, should be entirely funded by the jurisdictions conducting them. Moreover, the BLS should continue its projections program and should incorporate data from the censuses and from other available studies into the data base used in making such projections.

Compensation.—As previously noted, one of the most pervasive labor statistics problems is the absence of a comprehensive integrated data set on wages and benefits. In addition, government employment, accounting for almost 15% of the employed workforce is seriously underrepresented in the wage and hours data series. The BLS 790 program does not provide earnings and hours data for the government sector on a monthly basis and should be expanded to do so. The BLS industry and area wage survey programs do not include governments—and its Municipal Government Wage Survey program excludes States, counties, special districts and Federal employment. That program which only includes 27 cities of 500,000 population or more should be revised to cover all areas (about 70) within scope of the area wage survey program, and within those areas should be expanded to represent all units of government including the Federal Government and special governmental units such as education. Moreover, the Professional, Administrative, Technical and Clerical (PATC) surveys should be expanded to cover governments.[3]

The October 1976 report on "State and Local Government Employee Compensation Data Needs" by the Council on Wage and Price Stability contains recommendations for expanding Federal collection of data on State and local government employment compensation. The recommendations, in priority order, are: (1) "The Bureau of Labor Statistics should expand its Average Weekly Earnings series to include State and local government employees;" (2) "The Bureau of Labor Statistics should develop a series to report the size of collective bargaining settlements in the State and local sector;" (3) "The Bureau of Labor Statistics should expand the coverage of its Municipal Wage Surveys to cover a larger portion of the public sector;" (4) "The Bureau of Labor Statistics should conduct studies of the components of total compensation in the public sector;" and (5) "The Civil Service Commission should expand the scope of its State Salary Surveys to cover benefits." It should be noted, however, that the Council's findings and recommendations indicate that there is "a need" for data but does not indicate what purpose the data needed are intended to serve. Hence, the Council's prioritization of recommendations and the recommendations themselves cannot be assessed in terms of who needs what for what. Moreover, the absence of any statement of purpose (other than "The overall figures are especially useful to those who wish to keep track of trends in public sector earnings. . .") makes it difficult to assess the relative importance of these data to the Council and to others versus other possible data series pertaining to the private sector.

The industry and area wage survey programs exclude small units (with the size of establishment cut-offs varying by industry). These exclusions are based on the belief that there are too few workers in occupations that match survey definitions in the excluded units to affect wage and hours distributions and mean estimates. Nevertheless, some data (from New York State studies) does exist that suggests that there are enough workers in matching occupations in small firms to markedly affect the wage distributions and that excluding these observations tend to skew the distributions to the right. Accordingly, the size of firm exclusions should be reexamined through surveys that utilize the same collection methodology as do the ongoing studies to test the reasonableness of continuing the size of establishment cut-offs.

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[3] In addition, a special program should be instituted to provide for a matching of occupational classifications with common grade or level designations used by Federal, State, and local governments. This report should be jointly undertaken by the Civil Service Commission, the Advisory Committee on Intergovernmental Relations and the Bureau of Labor Statistics working in concert with the appropriate associations of the States, counties, cities, and other units of government and with the major unions of employee associations involved in State and local government. Further, private sector occupations should also be analyzed and classified into the same grade or level designations for statistical analysis. The results of this total effort would facilitate comparison between governmental units at the same (e.g., State) and different (e.g., city, county, and State) levels of government and would further facilitate comparison of wages and salaries and of total compensation between the public and private sectors of the economy by area (also see the section on Standard Occupational Classification).

It is conceivable that data on straight-time wages, permium payments, and hours worked and hours paid for can be obtained through a household survey such as the CPS. Such an approach can yield powerful analytic tools because of the family and other demographic and human capital information already available in the CPS; however, household data on earnings appear to underreport wage and salary information at lower earnings intervals. Since one of the uses for such data would be an analysis of low-wage workers, an understatement of their wages might be fatal to the analysis. Before any full-scale household survey of wage rates is undertaken, a full-scale validation study of wage rate data collected from households by examining employer records for the same workers is essential. Such an effort is now underway.

Annual wage and salary data are obtained through the March supplement to the CPS and from the Social Security Administration's records. The former series does not have sufficient sample to permit industry analysis and the latter does not contain data on occupation, hours paid or weeks worked, education and other demographic characteristics beyond age and race. Moreover, data based on the SSA files are available only after several years have elapsed since the end of the reference year, and the SSA exclude all earnings not covered by social security. One of the major uses to which the data are put is in the evaluation of manpower programs and the omission of these variables and the time in between dates of reference and availability create serious deficiencies for that use. Accordingly, the social security one percent annual employer-employee data file should be expanded so as to provide data on occupation (at least in broad groupings), aggregate hours and weeks worked during the year, education and family characteristics. This might be accomplished by either merging existing data in the Bureau of the Census files with SSA data, by conducting periodic sample surveys, or by some combination of these and other techniques. In addition, processing of these data should be expedited. In addition, the CPS data appear to understate earnings particularly at the lower earnings end of the distribution. Some understatement appears to also occur at the highest earnings level. If possible, new approaches should be developed to obtain better measures of wage and salary earnings in the CPS.

Employee Benefit Plans.—The statistical series on employee benefit plans are woefully inadequate for almost any purpose. They do not indicate who is, or how many people by demographic characteristics are covered by a pension, health, or life insurance program by level of benefits nor do they indicate the cost of the program to the employer and to the employee. What is needed is an analytical framework built on representative samples based on establishments that would cross relate level of benefits, number of persons by demographic characteristics that are covered, by industry, area, occupation and earnings level, by cost of plan on a unit base (e.g., hours, persons, etc.). In addition, data on benefit forfeitures, and out-of-pocket expenditures of individuals in addition to those covered in whole or in part by the benefit plan are needed for use in formulating and implementing public policy.

Industrial Relations.—The industrial relations statistics are derived from three sources: 1) the biennial survey of national unions and employee associations which provides union membership by industry, State, sex, and selected occupations in the aggregate and for particular unions; 2) annual data from the May supplement to the CPS which provides data on earnings by demographic characteristics for union and nonunion workers; and 3) establishment surveys which provide estimates of collective bargaining agreement coverage. The latter two sources do not provide satisfactory estimates of the number of workers actually covered by collective bargaining by industry, by area, or by union.

The data collected in establishment surveys relates to the number of production or nonsupervisory workers (in total) in establishments where a majority of the workers are covered by bargaining agreements. The surveys are either based on relatively efficient samples of the entire economy which does not permit the derivation of estimates below the industry division level, or relate to a handful of two, three, or four digit (SIC) industries and thus exclude the majority of industries at any level of industry classification. Moreover, small establishments are excluded from most of the surveys that obtain such data.

The estimates of collective bargaining agreement coverage obtained from the May CPS supplement diverge considerably from estimates obtained from either of the other sources particu-

larly when industry data are compared. This divergence should either be significantly reduced to a difference explainable by sampling variation or, if this is not feasible, the May supplement to the CPS should be dropped since the estimates based on establishment and membership studies are generally considered to be more accurate. To obtain more comprehensive data on contract coverage with detail by industry, questions about collective bargaining coverage should be added to the 790 program. Such an approach had been previously explored without success. The approach should again be tested because if the data could be collected it would also permit analysis of differential average wage and hours patterns by union-nonunion characteristic by industry. Further the addition of such questions would provide a statistical frame with which to select samples of union contracts covering workers in establishments of all sizes. Data describing the prevelance of contract provisions now excludes all contracts covering fewer than 1,000 workers.

Productivity.—The official series on productivity (output per unit of input) relate output to units of labor input only. Since labor input per unit of output can change without increased or decreased work effort because of technological changes, among others, new measures to measure output per unit of total factor input should be developed for simultaneous publication with the labor output series.

The productivity measures now available are particularly sparse in nonmanufacturing industries. The series should be expanded to cover as many of these industries as conceptually and technically possible.

The measurement of productivity in the governmental sector appears to be conceptually deficient particularly with respect to research, defense, legal, and administrative activities. Moreover, coverage—even in the Federal sector—is incomplete. The concepts should be reexamined by a group of nongovernment "experts" working in conjunction with the National Center for Productivity and Quality of Working Life and the Bureau of Labor Statistics, and the Federal agencies should be required to report, based on these concepts. Further, State and local governments should be encouraged to adopt the concepts and submit data for inclusion in the series.

Programs to be Discontinued

No programs are recommended for total discontinuance at this time. However, at a later time some programs may be integratable and a single program might provide the data now produced by several. For example, the Employment Cost Index (ECI) could subsume and eliminate the need for the adjusted hourly earnings index (which is simply a poor proxy—but the only one now existing for a measure of wage rate change), and the biennial compensation expenditure and payroll hours program could be eliminated if the ECI were expanded so as to provide periodic measures of level in the entire economy (by broad sector) as well as a measure of trend on a fixed weight basis. Such an economy wide level might be obtained in those years that the Bureau reweights the ECI to make it more current in its coverage. Other suggestions for program modification and elimination are discussed in the section on data gaps.

PRODUCTION AND DISTRIBUTION STATISTICS

Introduction

The production and distribution of goods and services is the most basic economic fact of life, ever since man first bartered one product for another. Although the measurement of production did not start until much later (probably with a flour miller making marks on the wall), statistics of production and distribution have been kept for centuries.

Early statistics were probably limited to a count of products made and sold and the number of persons employed. These two statistics are still the main measures of production and distribution today. The complexity of today's marketplace has meant that each and every different product cannot be counted separately, and dollar values are now used more and more to measure the production of a group of similar products.

Production, for purposes of this section, means those goods which are produced or those services which are performed by labor or managerial skills and enter directly or indirectly into commercial trade. Distribution means the offering of goods or services at a specific time and place, or in a particular quantity or amount, for example, wholesale and retail trade and transportation.

Many aspects of production and distribution are of special importance or of current interest. They are covered separately in the chapters on agricultural commodities, construction, energy, health, and education.

The areas that are the subject of this chapter are mining and manufacturing, communication and public utilities, wholesale and retail trade, finance, insurance, real estate, services including repair, and public administration. Imports and exports are a special part of wholesale or retail only in that they cross national boundaries.

The agencies collecting production and distribution data are the Bureau of the Census, Bureau of Mines, Interstate Commerce Commission, U.S. International Trade Commission, Social Security Administration, Department of Transportation, Federal Trade Commission, Corps of Engineers, Nuclear Regulatory Commission, Federal Reserve Board, Federal Power Commission, Small Business Administration, U.S. Forest Service, and many others.

Users of Production and Distribution Statistics

Production and distribution statistics are used by almost every organization—public, private, national, international, state, or local—concerned with the economy of the United States as well as many organizations concerned with the social aspects of the Nation. They are used in projections and analytic studies of capital, energy, labor, and civil defense requirements; defense mobilization; pollution control; international trade agreements; taxation; small business definition and evaluation; production bottlenecks; antitrust actions; and input-output, industrial-occupational, and import-export models. In most cases the information is used directly, but in many others the use is through the Gross National Product (GNP), Industrial Production Index, or the Wholesale Price Index. In some series, these statistics are not used directly, but are needed to complete the measures of the economy at a higher level of aggregation.

Basic Source Programs

Collectively, the quinquennial economic censuses is the largest Federal program of production and distribution statistics. In addition to these censuses, various Census Bureau monthly, quarterly, annual, or occasional programs fill in the data needs where more frequent data is required. Most of these intermediate series are benchmarked to annual and/or quinquennial series.

The quinquennial censuses provide the basic statistical profile of the Nation's businesses. Included in these censuses are the censuses of mineral industries, construction, manufactures, transportation, wholesale trade, retail trade, services and governments. This program includes the material needed to tie together most of the overall measures of the economy. The Census Bureau collects data on labor and capital input to industry with survey items on employees, wages, and capital expenditures; it measures the consumption of raw materials, water and energy use, and supplies; the production of goods and services; as well as inventories of and orders for goods. The Census Bureau also collects information on the sales of these goods to ultimate consumers. It provides the profile of how, what, and where these goods and services flow through the economy. The input-output table (described in the national accounts chapter) is based in very large part on the economic censuses.

These measures of the basic economy combined with profits, transfer payments, and imports and exports show a relatively complete picture of the supply and demand and flows of the economy. The economic censuses also provide benchmarks of weights for many measures of the economy tabulated by other agencies.

In addition to providing basic overall measures of the economy, the economic censuses provide a separate profile of each industry. The Census Bureau tabulations show geographic dispersion, concentration, and the scale of the operation for all manufacturing industries and some of these measures for most of the nonmanufacturing industries.

The retail sales figures are an important measure of the basic strength of the economy and consumer confidence and are a major input to the Gross National Product. These weekly and monthly series of sales by various groupings of stores are a major indicator of demand in the rest of the economy. The retail sales figures, especially in conjunction with inventories, are probably the best indicators of future production.

Inventories data are collected monthly at the manufacturers, wholesalers, and retailers level. Inventories are difficult to measure because of differences in valuation methods, determination of the ownership of inventories to avoid missing or double coverage of goods on consignment or returned or goods received but not invoiced or paid, and "in transit" considerations. New orders and backlog of orders are also collected in many sectors of manufacturing on a monthly basis.

In the manufacturing area, a series of *Current Industrial Reports* provide intercensal figures on the production of about half of the 11,000 different commodities collected in the census of manufactures. These reports are monthly, quarterly, or annual depending on the frequency of the need for such data. The *Current Industrial Reports* series provides data for industrial mobilization needs, basic data for evaluation of the impact of imports on U.S. industry, basic production data for the Industrial Production Index, international trade negotiations, as well as data to measure the labor productivity of the Nation.

The enterprise statistics program of the Bureau of the Census is a basic source of data to analyze the interrelationship of corporations across industries as well as the relationships to other corporations, subsidiaries, joint venture, etc.

The Bureau of Mines collects annual and monthly data on most minerals with some extension into competing items such as scrap, and further processed goods such as refined petroelum products and cement. Some reconciliation is made with the Censuses of Manufactures and Mineral Industries data, but additional work is necessary to reconcile the definitions and concepts. These data serve similar purposes for mining as the *Current Industrial Reports* mentioned in the previous paragraph serve for manufacturing. They also are an important measure of energy production (see chapter on energy statistics).

The Interstate Commerce Commission collects data on the movement of broad classes of commodities (see the transportation chapter for additional comment) as well as statistics on the number and types of equipment in use. Similar data is collected by agencies with responsibilities for air and water carriers. The Department of Transportation sponsors the collection and publication by the Census Bureau and State governments of urban origin-destination data. Other Federal agencies including the Department of Agriculture, Bureau of Mines, and Civil Aeronautics Board also collect data on the movement of goods and people (see chapter on transportation statistics).

The Corps of Engineers puts together statistics on domestic waterborne commerce. Their statistics are roughly comparable to other distribution statistics but are geared to the types of goods moved.

The U.S. International Trade Commission collects extremely detailed production and external trade data on synthetic organic and related chemicals on a continuing basis and many other commodities on an as needed basis. This collection is for the analysis of goods to recommend possible changes in the tariff rates or quotas. Other agencies, including the Census Bureau, Agriculture, and Environmental Protection Agency use these statistics for their statistical programs.

The Federal Reserve Board tabulates and publishes the Industrial Production Index (IPI). This index is a comprehensive measure of the physical output of mines, plants, and utilities of the United States. It is made up of 235 separate production series which are combined with value-added weights to a total output. For the sectors it covers, the Industrial Production Index provides an alternative measure of the goods producing part of our economy. It is a monthly index and is available usually 15 days after the end of the month, therefore providing a very current measure of the economy. Because the goods producing sectors are more volatile than the service producing sectors, this measure pin points the source of important changes in the economy.

An important proxy measure for some Industrial Production Index series and an industrial measure in its own right, is the electric power consumption by industry series. These data are collected by 3– or 4–digit SIC detail from most utilities and a majority of the large self-generators of electricity by the Federal Reserve Banks and forwarded to the Federal Reserve Board.

The Federal Power Commission (FPC) collects data on the total amount of electricity generated, the amount used by the power companies themselves, as well as power donated, the line loss, the amount sold for resale, and that sold to ultimate consumers. The FPC also collects substantial data on fuel used, fuel stocks, and the type and capacity of generating equipment and transformers as well as the number of miles of line by voltage carried. Similar data are collected for gas utilities. (See energy statistics chapter for additional details).

The U.S. Forest Service in the Department of Agriculture collects data on the production of logs for lumber and pulp and to a lesser extent for poles, posts, chips, Christmas trees and firewood. The U.S. Fish and Wildlife Service in the Department of the Interior collects data on catches of fish and wild animals. The Nuclear Regulatory Commission collects data on mining and refining of uranium and other radioactive materials (see chapter on energy statistics). The Small Business Administration collects some information on small businesses.

The Federal Trade Commission collects data with their Corporate Patterns Survey, Line of Business Survey, and Quarterly Financial Report.

The Corporate Patterns Survey is a source of data to analyze the interrelationship of corporations across industries, products, national boundaries, as well as the relationships to other corporations, subsidiaries, joint ventures, etc.

The Line of Business Survey is a statistical program to develop financial characteristics along subcompany lines, using a standardized definition of a line of business. Data on direct costs, and indirect costs such as overhead, advertising, insurance, and debt as well as profits are collected. This survey is a pioneer effort in developing detailed financial and profit profiles for a standardized definition of particular product or service lines. A program to develop better combinations of products which would be a part of accounting systems as well as further study of allocating procedures is needed. The Financial Standards Accounting Board has developed a draft statement in which these problems are evaluated and discussed.

The Quarterly Financial Report is a report with many balance sheet and income statement items of corporations primarily in mining, manufacturing, and trade. This report, based on a sample of 11,000 corporations, shows detailed financial aggregations, ratios and changes from earlier periods by Enterprise Standard Industrial Classification division with additional detail in manufacturing. Many of the items are also shown for different sizes of companies in manufacturing.

Many other agencies collect data in specialized areas which are described in other sections. Specialized agencies focus to a much larger extent on activity rather than the industry data for their areas of interest. For example, if a university runs a printing and publishing activity, the employees, receipts, capital expenditures, etc. of that activity may not be counted in either education or printing. (The BLS employment figures should include it in education, though.)

International trade statistics are used in many programs by the Departments of Agriculture, Commerce, Treasury, Labor, and State as well as by the U.S. International Trade Commission, the Special Trade Representative, and others. These programs rely heavily on statistics on imports and exports, but production, employment, and prices are also used.

International trade statistics are compiled and published by the Foreign Trade Division of the Census Bureau. Data on imports are collected as part of the documentation of the importation of goods and are handled administratively by the U.S. Customs Service in the Department of the Treasury . Data on all imports over $250 and a sample of imports of less than $251 are processed and tabulated on a monthly basis with some cross-tabulation by country of origin and in other arrangements.

Export data are also compiled by the Foreign Trade Division of the Bureau of the Census using an export declaration or machine-usable monthly reports. The U.S. Customs Service has

administrative responsibility for the collection of the export declaration. This declaration is required for all exports of over $250 and is supplemented by calculated estimates of the exports of less than $251. For exports to Canada, consideration is being given to the use of figures on U.S. imports from the United States. Duplication of effort in the collection of data concerning exports on one side of the border and imports on the other makes for extra burden and incompatible figures. The objective is to reduce the incompatibility between our exports and "their" imports to a minimum. Arrangements should then be made to use only one source for trade data. A standard international commodity classification system would help minimize the differences. Efforts to achieve a "harmonized" international system are now taking place through the efforts of the Customs Cooperation Council.

County Business Patterns (CBP) is a publication of the Census Bureau tabulating the number of establishments, first quarter payroll, annual payroll, and March 12 pay period employment to the 4-digit SIC level by county. This program utilizes the Census Bureau's Annual Organization Survey to obtain establishment data for multilocation firms. Data for single unit firms are obtained from administrative records of the Internal Revenue Service and the Social Security Administration. More specifically, payroll data are obtained from Internal Revenue Service form 941 and employment data from the Social Security Administration Form 941, Schedule A. Excluding the self-employed, *County Business Patterns* covers approximately 75% of the employment in the private sector. Major exclusions are government employees, farm workers and domestic service workers. Also, railroad employment subject to the Railroad Retirement Act are excluded. CBP coverage of hospitals, schools, and public utilities are limited to those operated by the private sector. Even though the coverage is poor in these areas (due to the predominance of government establishments in these industries), CBP is probably the most useful detailed profile of the sectors of the economy, especially at the county level.

Important Gaps

Many areas that need strengthening in production and distribution statistics are outlined in the chapter on national income accounts and are not covered here.

There is very little knowledge of size, receipts, and organization of some service industries. Statistics about industries which are not included in the economic census—"out of scope"—especially finance, insurance, real estate, social and miscellaneous services, charitable organizations, and truck transportation are especially lacking. (Some of these industries have been scheduled to be included in the 1977 Economic Census.) The statistics on government operating or nonadministrative establishments are not very well integrated with private sector statistics, for example, local transportation or highway repair.

Inventories and capital expenditures data are weak, but improvements are now being explored by the Census Bureau. (See the chapter on national accounts, particularly the GNP Data Improvement Project).

The *Current Industrial Reports* (CIR) mentioned above, cover about half of the manufacturing sector. With the elimination of the Annual Survey of Manufacturers question on the quantity of production, no quantity data on many items is collected between the Economic Censuses. For many of the items, quantity is not meaningful, but in view of the requirements of the 1974 Trade Act, a study of the *Current Industrial Report* program in relation to the need is necessary.

Programs Which Should Be Discontinued

The Industrial Mobilization Surveys that the Bureau of Domestic Commerce in the Department of Commerce does for the General Services Administration should be incorporated into the Capacity Surveys or Current Industrial Report programs of the Census Bureau. A problem exists because of a requirement for individual plant data. The Capacity Survey is still in need of additional work, both conceptually and in data gathering techniques, before it can substitute for mobilization needs.

The employement and wages data collected by the Census Bureau could be dropped when the Industrial Directory is operating. A single data item of overlap might be needed, at least for a while, but eventually it too could be dropped. Data on employment, wage rates, and earnings collected by the BLS could be incorporated into the data system that serves as the background to the Industrial Directory. This program needs to operate in parallel for a while before the differences in definition are even verifiable.

Recommended New Programs

A Broader Census Bureau Publication Program.—Title 13 of the U.S. Code forbids the Census Bureau to collect data from industries that are required to provide similar data to other agencies, but title 13 authorizes the Census Bureau to tabulate and publish that data. This effort of tabulating and publishing the data already in the hands of the Federal Government in a format consistent with the quinquennial census would increase the knowledge available to analysts, without any increased industry reporting burden. Much of this data is already in machine-readable form. Although much of the data can be assembled by a persevering analyst it is not in comparable form, units, or coverage. Some data cover a complete universe, but other data are uninflated sample totals. This program is of special relevance now, since the Census Bureau's Report of Company Organization allows much greater control over the industry classification and minimizes the duplication or omission of establishments.

An Annual Economic Data publication which would be an expansion of the present *County Business Patterns* which provides mid-March payperiod employment, first quarter and annual payroll, and number of establishments should help in presenting a comprehensive source of statistics about the Nation's businesses. This publication now includes establishments with about 75% of the private sector working population. The inclusion of Federal and State and local government workers would substantially increase the coverage of CBP. The government sector represents a total of approximately 14 million employees or over 15% of the labor force. The inclusion of sales and receipts data would provide for an accurate identification of this important view of the economic spectrum and would increase the value of the series. These data would provide comparable statistics for the 4-year interval between economic censuses.

Specialized agencies collect little data on the secondary activities of the establishments they cover and are uncertain as to the inclusion of data concerning the secondary activities of industries that are outside their responsibility for oversight. This concern for data on activities rather than establishments causes some lack of comparability with data collected on an establishment basis. There is very little integration or uniformity of data collected by regulatory agencies with that collected by the Census Bureau. There is plenty of data, (maybe more than can be utilized in a statistical program) but it is far flung and difficult for the analyst to put together. This compilation could and should be done by the Census Bureau, in fact, title 13 specifically authorizes them to do so. The Report of Company Organization provides the control to incorporate these statistics into a unified, comprehensive statistical data program.

One way to try to fill the gaps between activities and industries would be to ask all establishments to provide a checklist of activities. This checklist would be subject to endless requests to add questions such as: does the establishment have a printing capability, a health unit, serve meals, have construction capability, legal counsel, or advertising staff. The Census of Manufactures question on "Selected Metal Working Operations" could be used to provide one set of such "yes-no" activity check boxes. This check list in the Industrial Directory would be expensive, but there would be a substantial payoff. A few inquiries to firms of various sizes and industries could provide a ball park estimate of the extent and size of these secondary activities.

An example of the use of this checklist would be to evaluate the impact of suspected toxic substances in foods at establishments serving food away from home. The "Eating Places" industry covers only about 40% of that activity, since schools, hospitals and other health institutions, airlines, drug stores, department stores, and the Armed Services. Even some farms serve meals to nonfamily members.

Transportation Statistics—Integration of Data with Industry Shipments Data.—There is little knowledge of activities of truck transport and some other transportation industries. This is a difficult industry to obatin data about because of the large number of small establishments, and the frequency of many operators of going in and out of business. A truck owner may be in business for himself one day and not the next. An entrepreneur will get a hauling contract, lease a truck to fulfill it, but be back as an employee of another business before long.

Collecting data for the transportation census by getting it from manufacturers is a roundabout approach to the collection of transportation data. This does not mean we ought to abolish the

existing collection effort until we have an improved one in place. Even then we may want to collect some data each way. At least for the present, the survey forms that go to manufacturers to collect production statistics could be combined with those to collect shipping statistics into one package. A standard commodity classification which would provide enough detail for freight rate calculation would be a small start in collecting such data from transporters.

Comparable Public v. Private Sector Data.—Statistics on the business activities of state, local governments, and even the Federal Government are quite limited for comparison to private sector data. Wherever private sector data are collected, similar kinds of data should be collected for government establishments. Some data on an establishment base for public administration activities should be published.

STATISTICS ON THE ENVIRONMENT AND ON OCCUPATIONAL HEALTH AND SAFETY

Introduction

The objective of the Federal Government's collection of statistics on the environment is to facilitate and evaluate programs which are designed to help ensure public health and safety. Included are data on working conditions, the quality of the ambient air and water, and the effects of noise, wastes, and chemicals and industrial processes on man as well as factors which contribute toward his survival, health, and general well-being. There are no measurable parameters which directly correspond with the objectives of air quality, water quality, safe work environment, and ecological balance any more than there is a medical parameter called health or a socioeconomic measure termed quality of life. Nevertheless, there is a need for data on environmental conditions which facilitate public understanding, are produced on a timely basis, impart an understanding of their significance, are amenable to tests of validity and reliability, and satisfy the needs of private and public decisionmakers.

The facts and factors measured and analyzed by the environmental statistician are the product of complex industrial and social phenomena many of which interact and many of which are interdependent. For example, chemicals discharged into a stream may interact to form substances assimilated by fish which are hazardous to man, because of his dependence upon fish as food.

Although interaction and interdependence characterize the products and processes measured by the environmental/workplace statistician, the material presented in this chapter shows that environmental statistical activity is marked by arbitrary fragmentation of responsibility and insufficient communication between interdependent activities. Consequently, this chapter concludes that a comprehensive review of the need for and means of producing Federal environmental statistics is required.

A comprehensive assessment of the need of decisionmakers for environmental/workplace data is needed, because perceptions of what needs to be measured in describing the environment have changed. For example, it is now recognized that measurement of pollutant discharge is insufficient, since the interactions of some pollutants in the ambient air or water often result in products which bear only a remote resemblance to, and can pose a greater threat to health and environment than, the original substances. Moreover, the environment transports and transforms pollutants in such a manner that their end states and effects on man may require complex investigative procedures and instrumentation for adequate detection and control. For example, the effects of toxic substances and particulates disguise themselves as the degenerative diseases of old age.

In addition, monitoring and assessment systems have been developed on the basis of perceptions of data needs which are now undergoing review. Water quality monitoring systems, for example, which measure biochemical oxygen demand (BOD) and fecal coloform for use as proxies for other pollutants, were developed to meet regulatory requirements. These systems may not meet the needs of research directed toward the development of new standards. The same assessment is relevant to occupational safety and health monitoring, air quality

monitoring, and monitoring of pesticides production and utilization.

Responsible Agencies

The Federal Government collects, analyzes, and publishes environmental statistics on air quality and emission data; water quality and water supply; environmental contamination from radiation; noise pollution; toxic substances; the production, distribution and use of pesticides; the effect on the environment of energy sources now in use; the potential impact of new forms of energy upon the environment; and occupational injuries, illnesses, and exposure to workplace hazards.

Although the Environmental Protection Agency (EPA), through the use of Federal-State cooperative programs, is the primary data collection agency for statistics on the environment, these data are significantly supplemented by data collected by the Bureau of the Census, the Bureau of Labor Statistics (BLS), the Department of Agriculture, and the Department of the Interior.

In addition, major analytical programs concerned with the production of environmental statistics are conducted by the Council on Environmental Quality (CEQ) in the Executive Office of the President, the Bureau of Economic Analysis (BEA) in the Department of Commerce, the Energy Research and Development Administration (ERDA), the Occupational Safety and Health Administration (OSHA) in the Department of Labor, and the National Institutes of Health (NIH) in the Department of Health, Education, and Welfare (DHEW). CEQ provides independent air and water quality evaluations, environmental indicator and statistical reports, pollution abatement cost analyses, and the Federal overview report (annual) on environmental conditions and trends. BEA produces information on pollution control and abatement expenditures within the framework of the national economic accounts. Data on the release of radioactivity is produced by ERDA. OSHA produces reports on the incidence and severity of occupational injuries and illnesses. The National Cancer Institute and the National Institute of Environmental Health Sciences within NIH produce data on environmentally related cancer.

Several agencies perform significant statistical support roles with respect to environmental statistics. Environmental impact data are produced by the U.S. Fish and Wildlife Service in the Department of the Interior and by many other agencies. The Mining Enforcement and Safety Administration (MESA) in the Department of the Interior produces mine injury data and data on black and brown lung diseases. The National Institute for Environmental Health Statistics (NIEHS) conducts a full-range of epidemiological studies related to pollutants. The Health Interview Survey (HIS) of the National Center for Health Statistics (NCHS) collects self-reported health information and occupational data on an annual basis. The National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce and the U.S. Geological Survey (USGS) of the Department of the Interior produce data on the quality of ambient air and water.

Use of Environmental and Workplace Data

Interest in statistics on the environment and occupational safety and health is broad and lively. In the 94th Congress there were 35 full committees and 88 subcommittees having some jurisdictional claim over either the Environmental Protection Agency, or the Energy Research and Development Administration, or the Occupational Safety and Health Administration. These involved Senate Committees on Aeronautical and Space Science; Agriculture and Forestry; Banking, Housing and Urban Affairs; Commerce; Foreign Relations; Labor and Public Welfare; and Public Works. In the House of Representatives, Committees on Government Operations, Interior and Insular Affairs, Interstate and Foreign Commerce, Merchant Marine and Fisheries, and Small Businesses were concerned with programs of those agencies.

If a dam, highway, or power plant is to be built, a new pesticide to be used, a new production process to be introduced, bubonic plague contained, supersonic transportation evaluated, and dandelions controlled, there will be an interest in the use and production of data on the environment on the part of the Congress, courts, business, industry, and the public at-large.

Data on the environment and workplace are used by Federal and State agencies to set standards to control automobile emissions, monitor the quality of drinking water, identify sound work practices in lumbering, control insect infes-

tations, protect field workers from exposure to pesticides, and much more.

Core Programs for Environmental Statistics

Ambient Air Quality.—The Office of Air and Water Management, EPA, collects information on pollutants in the ambient air and on the emissions of point and area sources such as automobiles, power plants, incinerators and particular industries. The pollutants measured include: suspended particulates, sulfur dioxide, oxidants, ozone, nitrogen dioxide, and total hydrocarbons. This information is collected, maintained, and reported by the Aerometric and Emissions Reporting System (AEROS). The purpose of AEROS is to integrate point source information contained in the National Environmental Data System (NEDS) with the ambient air quality data in the Storage and Retrieval Aeromic Data System (SAROAD). Also encompassed within AEROS are other systems which provide information on source text data as well as environmental data, from other agencies.

The point sources emissions information in NEDS summarizes data by type of source for EPA program areas. These data are collected by State and local governments on 75,000 point sources and about 3,200 area (county) sources.

Much of the data in EPA's National Aerometrics Data Bank are known to have been obtained by unapproved or unacceptable methods of analytical measurement. Among serious air monitoring deficiencies which have been noted are: improper location of monitoring sites and placement of instruments, errors in data handling and calculations, inadequate planning for quality assurance, and lack of intercity data comparability. Consequently, these data must be used with considerable caution.

State governments, through the National Aerometric Data System (NADS), submit source and emission data in NEDS format every six months for five pollutants: total suspended particulate matter (TSP); sulfur dioxide (SO_2); carbon monoxide (CO); and oxidants (Ox). Also, all source and emission data collected by EPA (in-house, by grant or by contract) are incorporated into NEDS.

Ambient air quality data are generated by over 4,000 active air monitoring sites across the Nation for input into the SAROAD system. The coding structure for the system provides for 72,000 pollutant codes. The sampling intervals associated with the data range from one-hour averages of continuous monitoring to monthly and quarterly composites. Among reports generated by this system are standards reports which show the number of times standards have been exceeded for SO_2, oxidants, ozone, hydrocarbons and suspended particulates.

The emissions data of NEDS, which are point source in character, can be merged with the ambient air quality data stored in SAROAD. The merged information can be accessed by State and private users through NEDS. One such merger might, for example, combine NEDS emission data on tons of sulfur produced per tons of copper smelted with SAROAD data on the levels of SO_2 in the ambient air.

The National Air Surveillance Network (NASN) of the EPA's Office of Air and Water Management collects ambient data on radionuclides, five gaseous pollutants, suspended solids in rainwater, and particles of matter suspended in air. The NASN data are stored in the SAROAD system along with State air implementation plans.

EPA's Office of Research and Development conducts epidemiological studies similar to its recently completed Community Health Environmental Surveillance Studies System (CHESS). That system monitored health functions of people in areas of high concentrations of air pollutants. Ambient air quality data for CHESS was produced by the Community Health Monitoring Program (CHAMP). The CHAMP program is a continuing air monitoring activity which generates epidemiological reports as well as providing data for SAROAD at 6-month intervals.

The National Center for Health Statistics in DHEW collects data related to illnesses caused or aggravated by air pollutants. The National Oceanographic and Atmospheric Administration (NOAA) in the Department of Commerce operates a turbidity and precipitation network and reports its findings monthly. These data are transmitted to EPA and included in NEDS. Consequently, EPA employs data produced by other Federal agencies in lieu of separately originated data collections.

Water Quality and Supply.—Federal data on water quality and supply are collected by the

EPA's Office of Water and Hazardous Materials and the Water Resources Division, U.S. Geological Survey (USGS), Department of the Interior. These data collections are complementary. The EPA collects these data from the perspective of human use, consumption, and municipal, industrial, and agricultural impacts, while the USGS data are collected with water viewed as a natural resource. USGS monitoring station sites provide nationally uniform data. EPA's data is derived from monitoring stations, the locations of which are mostly determined by population and industrial density factors. By combining the USGS data and EPA data, it is possible to derive the net contributors of population and industrial density factors to the pollution of ambient waters.

The EPA's water quality data are generated by a Discharge Permit Program and a Stream Monitoring Program both of which are Federal-State cooperative efforts. EPA's Office of Water and Hazardous Materials enters these data into a data bank (STORET). A Discharge Permit program has been designed to provide an inventory of effluent discharge point sources and periodic reports on effluent contents from companies and establishments. Implementation of this permit program has encountered significant problems. The Stream Monitoring Program provides data on ambient water quality. These programs provide information on effluent parameters including: suspended solids, fecal coliforms, amonia, dissolved solids, dissolved oxygen, phenols, dissolved phosphate, sulfates, organic nitrogen, biochemical oxygen demand, and nitrite. Point source data are related to factors such as discharge, industrial process, and employment.

Ambient water quality information on major impact areas is obtained through EPA's National Water Quality Surveillance System which consists of 60 pairs of stations and 30 single stations on various U.S. waterways. Physical and chemical parameters, including pesticides and metals are measured by the paired stations. These data are supplemented by nationally uniform background data from the USGS National Stream Quality Accounting Network which will include an array of 525 stations, and by the EPA's Construction Grant Program which provides data on new and modified municipal treatment systems. Most of the National Water Quality Surveillance System data collection and laboratory analysis is conducted for EPA by USGS.

The Water Resources Division of the USGS determines the source, quantity, quality, distribution and availability of both surface and ground waters. Other data on water supply is generated through EPA's Inventory of Public Water Systems Needs Survey.

The Federal Power Commission (FPC) collects information on water pollutant discharges from steam electric power plants. These data are incorporated in the USGS water data network, which provides a mechanism for coordinating Federal acquisition of water data.

Other Basic Programs.—The air and water quality programs of the EPA, USGS, and related efforts of other agencies such as those of the FPC, the Department of Agriculture, and NOAA, are larger or further developed than other Federal environmentally related data collection and analysis efforts. Within the environmental data field there are components which produce data on: *radiation* (ERDA); *pesticides* (EPA's Office of Pesticides Program; Food and Drug Administration (FDA), USGS; Animal and Plant Health Inspection Service, USDA; U.S. Fish and Wildlife Service, Department of Interior; Bureau of the Census; and NOAA); *noise pollution* (Federal Aviation Administration in the Department of Transportation; EPA; and the National Institutes of Health in DHEW); *toxic substances* (National Institute for Occupational Safety and Health (NIOSH), DHEW; FDA; and EPA's Office of Water Programs Operations); *solid wastes* (EPA's Office of Solid Waste Management Programs; the Bureau of Mines in the Department of the Interior; and Bureau of the Census, Department of Commerce); *pollution abatement and control expenditures* (the Bureau of Economic Analysis, Department of Commerce; and divisions of the Bureau of the Census including Governments, Housing, and Industry); *energy development and conservation* (EPA's surveys on energy utilization; and ERDA's health effects studies which involve nearly one-half of all Federal expenditures on energy use/development health effects).

The Division of Biomedical and Environmental Research in ERDA conducts a broad research program on health, safety, and environmental effects of existing and potential energy sources. A fiscal year 1977 program of the Biomedical and Environmental Research Division involves health studies, biological studies, environmental studies, and physical and technological studies.

Other programs involve operational safety, environmental control technology, and reactor safety.

The Energy Research and Development Administration is charged by Congress to develop a comprehensive energy research, development, and demonstration program. Pursuant to that requirement, ERDA has developed a listing of all Federal activities involving biomedical and environmental research, environmental control technology, water management, and transportation research and development. This information has been classified under the following headings: characterization, measurement monitoring; environmental transport process; health effects; ecological effects (air/terrestrial, fresh water, marine and estuarine); and integrated measurement.

Apart from ERDA's assumption of the Atomic Energy Commission's responsibilities for collection of radiation data through the Office of Reactor Safety Research Coordinations, ERDA's environmental statistical programs currently involve a significant array of research projects and the development of analytical models which rely upon other Federal agencies or the private sector for data.

Core Programs for Occupational Safety and Health

The Bureau of Labor Statistics conducts for the Occupational Safety and Health Administration an annual Federal/State cooperative survey of occupational injuries and illnesses using a sample of 500,000 establishments to produce data on the national and state incidence and severity of occupational injuries and illnesses at 4-digit SIC manufacturing and 3-digit SIC nonmanufacturing industrial detail.

The Occupational Safety and Health Administration is conducting a National Emphasis Program which uses standards compliance data, workmen's compensation data, and the BLS Annual Occupational Safety and Health Survey to focus on industries exhibiting high injury rates. The purpose of this effort is to allocate compliance program resources, assess the impact of investigation activity and to determine needs for workplace safety and health standards.

The National Institute for Occupational Safety and Health (NIOSH) of the Center for Disease Control, DHEW, conducts several programs of significance for environmental and occupational safety and health statistics. The joint NIOSH/OSHA Standards Completion Project is directed toward the development of workplace standards for almost 400 chemical substances. Existing workroom level standards promulgated by the Department of Labor are completed with requirements and criteria for employee monitoring, training, medical surveillance and recordkeeping. The National Occupational Hazard Survey and its component Trade Name Ingredient Clarification project examined a representative national sample of workplaces to provide information on the extent and conditions of workforce exposure to potential physical, chemical, and biological hazards. Industry-wide studies are conducted regularly to identify health characteristics of particular industrial processes. Illness surveillance investigates the health experience of selected employee populations.

The Mining Enforcement and Safety Administration (MESA) of the Department of the Interior is primarily involved in the collection of mine safety and health statistics and conducting epidemiological studies via arrangements with NIOSH and contracts with the private sector.

Statistical Issues and Information Gaps

It is evident that the collection, production, and analysis of environmental/workplace data are characterized by statistical gaps, lack of coordination, insufficient inattention to the quality of data, and insufficient priority on reporting and analytical outputs. While a number of programs are of outstanding quality, many others require extensive evaluation as to quality and practical utility of the data being collected.

Foremost among environmental/workplace statistical issues is insufficient information for use in planning and coordinating statistical programs. Insufficient attention has been given to developing a prioritized inventory of the statistical needs of program and policy development and program management. Also lacking is an inventory of current operating statistical resources. Consequently, in the absence of this planning information, little of the potential for the development of interagency and intermedia programs is being recognized or realized.

It is also evident that there has been a piecemeal development of statistical resources.

In some instances there has been independent development within a single agency of recordkeeping systems, reporting systems, monitoring activity, surveys and research. In other instances, statistical programs have been developed without adequate consultations with other Federal agencies having potential interest in the data to be produced.

Some environmental/workplace statistical programs make inadequate provisions for insuring that the data produced are of acceptable quality. For example, the clearance procedures of some agencies are failing to identify gross blunders in sampling and questionnaire design prior to submittal to the Office of Management and Budget under the provisions of the Federal Reports Act. It is evident that the statistical resources of these agencies, which are quite competent, are not adequately consulted in the design and review of proposed data collection efforts.

Inattention to statistical quality concerns extends to activities other than surveys. For example, massive quantities of information on pollutants have been generated with minimum effort to assess or improve the validity or reliability of these data.

In the following paragraphs there is a listing of data gaps and statistical issues. The relative significance of these gaps and issues cannot be judged apart from the development of a prioritized interagency listing of the informational needs of environmental/workplace program managers.

Since 1970, three Federal agencies have been created for which environmental concerns are a primary mission. In each case they have been formed by assembling within one agency previously scattered but related activities and resources. The Environmental Protection Agency, organized in 1970, amalgamated 15 components previously scattered among the Department of the Interior, DHEW, USDA, and the Atomic Energy Commission. Similarly, the Occupational Safety and Health Act of 1970 established the Occupational Safety and Health Administration in the Department of Labor and the National Institute for Occupational Safety and Health in the Department of Health, Education, and Welfare and required coordination between those new agencies. More recently (1975), the Energy Research and Development Administration has integrated programs previously scattered among the National Science Foundation, Department of Housing and Urban Development, Federal Power Commission, National Aeronautics and Space Administration, Atomic Energy Commission, and Federal Energy Administration.

There has been movement away from the production of environmental data by scattered, highly specialized units toward the development of interdisciplinary programs which now contain potential for coordinated interagency planning. This evolution has involved changes in (1) perceptions of data needs, (2) organization, and (3) the development of new methods of measurement. The completion of the evolution will require (1) greater emphasis upon the formal and informal exchange of information among and within agencies and (2) the establishment of a mechanism for priority setting.

Currently the production of environmental/workplace statistics is being affected by changes in perception as to what needs to be measured. OSHA is moving beyond threshold limit value health standards to the development of new standards for carcinogenic substances and other chemicals such as asbestos. It is also recognizing the need to secure information on the distribution of hazards and correlative measures of exposure of workers across industries. The EPA is experiencing similar change. For example, water quality monitoring which previously focused upon the presence of a limited range of effluents will be expanded. Moreover, through 1977, EPA is requiring the control of effluents on the basis of the "best practicable technology." After 1977, effluent standards will require control on the basis of "best available technology." Involved in this shift from "best practicable" to "best available" will be changes in monitoring strategies, instrumentation, and the measurement of previously unmeasured substances now known to be health hazards.

In producing data on the environment a need to develop new and more sophisticated methods of measurement has arisen. For example, it is recognized that while information now collected on occupational injuries may be suitable for establishing legal accountabilities and compensation, that same information does not yield data useful to assist planning for enforcement programs for the casual analysis required in the interest of developing workplace standards. Another area of considerable concern is that

there are no current means for securing comprehensive national level medical diagnostic, much less employer, reporting on occupational disease. Many illnesses resulting from exposure to toxic substance are sufficiently rare that, even if recognized, existing data bases and national samples are too small to permit production of reliable data.

These examples, drawn from the occupational health field, have immediate parallels in the other environmental fields. In common, they share a general, recognized need to develop new methods of measurement ranging from measuring simple eye movements and hand dexterity to large-scale longitudinal surveys focused on exposure to and effects of a wide array of toxic substances.

A final phase in the development of environmental statistics is now emerging. This phase involves intragency interdisciplinary review of data requirements and the beginning of interagency statistical coordination efforts. This is evident in the planning approach of the Energy Research and Development Administration. Because ERDA's mission requires it to focus upon forms of energy, their consumption and attendant risks, it has not been constrained by rigid fragmentation of its field of inquiry. By way of contrast, activities producing statistics on pesticides are scattered among agencies and are divided by legislatively defined areas of responsibility. Thus, NIOSH may investigate the exposure of manufacturing employees to pesticides, but not the exposure of household members (an EPA responsibility). Both of those agencies and the Department of Agriculture have experienced some difficulty in sorting out responsibilities with respect to the pesticide exposure of agricultural workers. Unconstrained by such divisions of authority, ERDA has been the first agency to produce an integrated concept of its field of inquiry.

Administrators confronted by overlapping fields of responsibility have established some standing interagency committees in which information on priorities and programs is shared. Professionals charged with specific research tasks have secured the review of planned projects across interagency lines, ERDA, given its crosscutting charter and responsibility for coordinating interagency energy related research, has produced the outline of a conceptual framework which encompasses broad sectors of environmental statistics. These activities, however, largely leave untouched the development of means for effective coordination.

In view of the foregoing, it is not surprising that a number of statistical gaps characterize environmental/workplace statistics. These gaps are illustrative of the broad range of data collected, problems with data quality, and a need to review the information requirements of decisionmakers in the light of existing and prospective statistical programs.

WATER QUALITY

1. While great quantities of water quality monitoring information have been collected on pollutants discharged into the ambient water, no effective means has been devised for storage, retrieval, and analysis of this information.
2. Federal information on water quality is now accessible to only two-thirds of State governments and access by the scientific community is limited.
3. Methods of water quality measurement lack coherent network design, standardization and adequate data quality assurance procedures. Data collected by the U.S. Geological Survey are a notable exception.

AIR QUALITY

1. Standard methods of measurements and quality assurance are inadequate, and the resulting data are not comparable between cities.
2. Changes in meteorological factors which affect the chemical composition and concentration of pollutants are not adequately accounted for in monitoring air quality.
3. Data on the exposure of the population to air pollutants is incomplete, because no information is collected on pollutants in the households. Data on workplace population exposure is limited, and some data on exposure to pollutants in the ambient air is of questionable validity and reliability. Consequently, the total exposure of individuals to specific pollutants and their concentrations is not known.
4. Air quality data compiled by the Federal Government is accessible only to EPA and CEQ and to those agencies with difficulty.

PESTICIDES

1. Information is lacking on how much technical grade product is being manufactured by whom and for incorporation in particular final products.
2. Air and water quality programs provide information on the presence of pesticides, but do not provide adequate information on the source or concentration of those substances.
3. Inventory data is lacking. There is no information on how much of particular pesticides is being stored and where such storage is located.
4. Information on the specific use of pesticides is lacking, as well as related information on pest infestations. (Pest infestation data are largely limited to USDA information on agricultural pests.)
5. Pesticide producer registration data is reported on a company basis. No information is collected on location of establishments; therefore, information is lacking on where quantities of pesticides are produced and what exposure of the labor force is involved.

TOXIC SUBSTANCES

The experience of NIOSH indicates a need for development of a standard, refined system for codifying the use of toxic substances including indication of type or degree of exposure. The lack of a coding structure results in a limited ability to identify populations exposed to particular substances and causes OSHA to do research on application of NIOSH findings it might not have to conduct, if there were proper coding.

Economic Impact of Environmental Regulations.—Information on the economic impact of environmental programs is needed for such purposes as estimating their importance in the household, business, and government sectors of the gross national product and in surveys of investment outlays (actual and planned) of private industry, assessment of their impact on U.S. competition in foreign markets, and in determining their impact on employment opportunities in the United States. Measurement of the economic impact of environmental programs requires information on pollution abatement costs, transactions costs (planning, monitoring, enforcement), damages to the environment, and avoidance costs. While substantial information is available on abatement costs (Bureau of Economic Analysis, Census and EPA), information on transaction costs is less extensive. Relatively little information is available to evaluate damages, and virtually nothing is collected on costs of steps taken to avoid pollution. Thus, information is incomplete or lacking on: (a) pollution abatement related to plant closing and job losses, (b) the cost to industry and government entailed in the planning for, monitoring of, and enforcement of air, water, noise, and pesticides standards, (c) damages to human health, plant and animal life, aesthetic values (public buildings, statues, etc.) etc., and (d) the relative increase in the cost of production entailed by choices between different pollution control/abatement methods.

Occupational Safety and Health.—Occupational safety and health standards are developed for workplace conditions, including substances, processes, equipment, and their emissions, and ambient conditions such as noise and heat. Some standards relate to the work practices of particular occupations; for example, power press operators and carpenters (guarding of power operated hand saws). Occupational illness and injury data are not collected on a statistical basis which can describe and analyze the relationships that exist between injuries, illnesses, industry, occupation, work experience, and workplace standards. This gap effects compliance program planning, priority setting for development of workplace standards, and plans for research programs.

Lack of information on occupational illnesses is considered to be a major statistical gap by the Occupational Safety and Health Administration. There are three statistical programs which could, but do not, close that gap. First, it is believed that occupational illnesses are seriously underreported on the BLS annual survey of Occupational Illnesses and Injuries. Second, annual figures of the national Health Interview Survey (NCHS/HEW) of 40,000 households are often not of sufficient size to relate morbidity conditions to industry and occupation of the respondant. Aggregated data from Health Interview Survey will provide information for making broad determinations on the general occupational/morbidity relationships. The Social Security Administration's administrative records data on disabilities are available on the basis of a

sample which is too small to meet Federal occupational safety and illness data requirements. In addition, the SSA data provides information only on cases where disability awards have been made.

Although spending for workers health and safety increases the direct cost of production and creates an additional demand for capital, little information is available on those costs. Such spending is now reported, but not separately identified, in the national economic accounts. This spending should be measured using definitions and concepts consistent with the economic accounts. Such comparability is essential for comprehensive analyses of the effects of occupational safety and health regulations on the economy. Work on this program is included in BEA's five-year plan of potential new projects.

Future Directions

Concerns expressed by both environmental program administrators and their statisticians indicate that their perception of what data are needed has changed. For example, there is current interest in the validity and reliability of composite environmental indicators. The practice of developing vertical standards for specific industries may be supplemented or replaced by the development of horizontal standards for specific work practices, activities and processes. In addition the need to isolate the effects of exposure of persons to a particular pollutant in some setting from the more general exposure of the same persons to the same pollutant suggests the development of interagency integrated monitoring.

There is also much to suggest that higher priorities are likely to be given to two areas of concern in the near future: (*a*) the identification of and collection of data on the population-at-risk to particular safety and health hazards, and (*b*) the identification and demonstration of cause and effect relationships.

Population-at-Risk Data.—The programs of both EPA and OSHA are emerging from an initial emphasis upon broadly recognized hazards, establishing monitoring techniques, and recognized abatement and control methods. There are many hazards in the environment which are known to exist, but little is known with respect to the numbers of persons exposed, their degree of exposure or the effects of those exposures. For example, there is no information on the number of workers engaged in producing pesticides, the degree of their exposure to those products or the secondary exposure of family members through transport of chemicals from workplace to the home on the clothing of workers. The same lack of information exists with respect to many thousands of chemical substances which are known to be toxic.

A somewhat analogous situation exists in regard to occupational injuries. Though reliable data exists concerning the number of injured workers classified by industry and by State, there is inadequate information on occupation of injured, work history of injured, part of body injured, and events occurring at the time of injury. These kinds of data are not available on the injured population and are required for the development of information on the cause or causes of injuries.

Information identifying the population-at-risk for particular hazards is deemed essential for establishing priorities for new standards and thereby priorities for research. Otherwise, the priorities of environmental programs are forced to respond to reports of major catastrophies and appearances of high risk in spite of evidence which indicates that yesterday's tragic event is no predictor of tomorrow's trauma.

Injury and Illnesses Causation.—Historically, efforts to record and collect data on the causes of occupational injuries and illnesses have been influenced by concern for establishing legal responsibility. This is still largely the case. Federal agencies now recognize that identification of legal responsibility differs from the detailed specification of a causal chain required for the development of strategies calculated to remove or reduce risk for a target population. The development of these strategies and promulgation of relevant standards are the driving forces behind a concerted new emphasis upon human health effects studies and research directed toward identifying the kinds of information required for worker injury analysis.

Required Coordination Mechanism

Presently, there is no coherent view of the Federal need for and production of environmental statistics. Moreover, some agencies which have primary environmental missions do not

have a systematic view of their data needs and statistical resources.

The further development and improvement of Federal statistics on the environment requires the establishment of an interagency Environmental Data Policy Committee. The purpose of the Committee would be to: (1) specify environmental data needs (including workplace data); (2) identify gaps and overlaps in current statistical programs; (3) review the structure and allocation of statistical resources; (4) develop mechanisms for interagency coordination; and (5) develop an interagency planning process which can provide general guidance to the coordination, development, production, and analysis of environmental statistics.

The work of the Committee would require: (1) an inventory of existing and proposed legislation affecting or requiring the production of environmental statistics; (2) a review of existing agency roles; (3) an inventory of priority needs for statistical resources including gaps, timeliness of data, quality assurance, and proposed new programs; (4) an inventory of environmental data projects including periodic surveys, administrative records systems, monitoring or surveillance systems, permit systems, and programs requiring a continuing series of discrete but related surveys; (5) an identification of the minimum basic data sets required by policy development and program management with a view toward comparability of data and development of systematic data bases; and (6) the development of a descriptive framework for interagency on-line exchange of information on the current and proposed content of data systems. Through the use of appropriate agency and interagency task groups sufficient progress should be achieved toward these objectives to enable the Committee to impact on fiscal year 1978 allocation of statistical resources between and within agencies.

CIVIL RIGHTS DATA

The Issue

The United States is committed by its Constitution and the laws of Congress to securing for all citizens the right to participate in, and benefit from, the full range of opportunities available in the Nation. Legislation of the past decade has focused on the equal treatment of citizens regardless of their race, ethnicity, sex, age, and/or handicapping conditions. The Federal role is two-fold. On a general level, the Government must ensure that citizens do not experience discrimination in gaining access to opportunities available in either the public or the private sector. On a more specific level, the Government must enforce a variety of laws, court orders, Executive orders, and regulations concerned with the equitable distribution and delivery of federally assisted or sponsored services to eligible beneficiaries.

Despite the existence of equal opportunity legislation, and initiatives within various Federal programs to ensure that the laws are applied, unequal treatment persists. While there are many differing judgments concerning both the sources and the degree of discrimination which exists, it is clear that the ad hoc, diverse, and even passive civil rights enforcement systems of the various Federal agencies have not been sufficiently comprehensive either to measure or to eliminate inequitable distribution of Federal assistance. No one agency of the Federal Government is assigned the responsibility to serve as a focal point for civil rights activities. For example, the Equal Employment Opportunity Commission is responsible for enforcing title VII of the Civil Rights Act of 1964, which prohibits discrimination of public and private employment, the Office of Federal Contract Compliance Programs oversees the application of Executive orders which prohibit discrimination in employment by government contractors, and additional Federal units have been directed to monitor civil rights compliance in other areas of employment. Added to this dispersion of responsibility are the compliance activities of the Department of Housing and Urban Development, the Department of Justice, and the Department of Health, Education, and Welfare.

The current fragmentation of Federal civil rights initiatives stems directly from the diverse origins of civil rights requirements in the executive, legislative, and judicial branches. The prob-

lems caused by this fragmentation are further exacerbated by the sensitive and dynamic nature of the civil rights environment. Judicial decisions, and statements by key government officials, can influence the direction or emphasis of enforcement activities with a concomitant effect on information needs. The net result of this historical development is the presence of a multitude of overlapping requirements and uncoordinated activities which tend to frustrate both those seeking to comply with the intent and purpose of the laws and those seeking to secure enforcement.

Those Federal agencies which have attempted to design and implement civil rights data collection programs have in general tried to ensure that discrimination is absent in public and private agencies receiving Federal grants and contracts and, to a lesser degree, to ensure that Federal program resources are distributed equitably. Given the absence of specific government-wide goals and priorities for civil rights initiatives at the Federal level, it is not surprising to find that many agencies have failed to develop or execute viable, agency-wide plans for the collection and use of civil rights data.

Even the agencies requiring the maintenance and provision of civil rights data by Federal resource recipients have given inadequate consideration to the questions of who should use the data and how the information should be used. There is no systematic methodology employed either within or across the several agencies for identifying eligible beneficiaries, determining whether those eligible are participating equally (by race, sex, ethnicity, etc.) in the services available, or assessing the degree to which those served are receiving the intended program benefits without disparities which could be attributed to discriminatory practices.

While it may appear inappropriate to recommend a definitive program of recordkeeping, data collection, and information use in the absence of government-wide goals and priorities for agency civil rights actions, it is reasonable, based on the current legislation, executive orders, and court rulings, to suggest at least a minimum set of initiatives to be undertaken and problems to be addressed by the U.S. Federal Statistical System. These initiatives stem from the general assumptions that the Federal agencies must:

- Ensure that individuals do not experience discrimination in employment, housing, education, voting, the administration of justice, and access to places of public accommodations;
- Establish that the recipients of Federal resources are in compliance with civil rights laws;
- Ensure through planning that Federal program resources will be distributed equitably to all eligible program beneficiaries; and
- Determine through evaluation that benefits were distributed equitably and that the treatments were provided on a non-discriminatory basis.

The data collection and analysis activities which would be required to address this seemingly limited set of activities represent a level of effort which is an order of magnitude greater than current or even anticipated resources would allow. To determine by way of actual head counts the total numbers of persons eligible for benefits, let alone their characteristics and needs, would require data collection programs of exteremly high dollar cost, with an exceptionally heavy burden of public reporting. Despite the fact that a less than ideal solution to these problems must be accepted, it is clear that much can and should be done at the Federal level to improve data collection and analysis efforts which must be used as a primary vehicle in meeting the letter and the intent of civil rights legislation. There must be an expanded government-wide effort directed toward achieving an appropriate balance between information needs, resource availability, and respondent burden.

Agencies and Programs Involved

The various civil rights laws, Executive orders, and judicial decisions of the past decade provide broad protections against discrimination in virtually every aspect of life—in education, employment, housing, voting, administration of justice, access to places of public accommodation, and participation in the benefits of federally assisted programs. Some of the remedies require the aggrieved individual to take the initiative in securing his own rights. In most cases, however, responsibility is placed on Federal departments and agencies to act affirmatively in

support of the guaranteed rights by ensuring equitable treatment of all potential beneficiaries.

Employment.—Equal opportunity in employment is mandated by a host of Federal enactments, including statutes, judicial decisions interpreting the Constitution, and Executive orders and regulations. Taken together, they constitute a comprehensive ban on job discrimination, covering all Federal, State, and local government jobs and nearly all private employment. Executive Order 11478 (issued August 8, 1969) and the 1972 Amendments to title VII of the Civil Rights Act of 1964, extended to Federal employees equal opportunity regardless of race, color, religion, sex or national origin, and required promotion of "the full realization of equal employment opportunity through a continuing affirmative program in each executive department and agency." The Civil Service Commission is directed to provide leadership and guidance to other executive departments and agencies in the conduct of equal employment opportunity programs. The Commission is also directed to review and approve agency affirmative action plans on an annual basis and routinely to evaluate agency equal employment opportunity programs.

The Equal Employment Opportunity Act of 1972 prohibited employment discrimination by State and local governments and gave the Department of Justice the authority to bring suit where there was an indication of a pattern and practice of discrimination by State and local government employers. Under the provisions of the Intergovernmental Personnel Act of 1970, the Civil Service Commission exercises additional civil rights authority with regard to State personnel through its administration of the Merit System Standards which require that State employees administering certain federally aided programs be selected, promoted, and compensated according to a federally approved, State-administered system. The Civil Service Commission relies on data collected by the Equal Employment Opportunity Commission concerning the race, ethnicity, and sex of State and local employees to ensure compliance with this requirement.

Presidential authority to require equal employment practices of Government contractors has been exercised for more than 30 years through successive Executive orders. Executive Order 11246, as amended by Executive Order 11375, prohibits discrimination in employment on the basis of race, creed, color, national origin or sex, and requires Federal contractors to take affirmative action to ensure that equal employment principles are followed in personnel practices at all company facilities. In addition, section 503 of the Rehabilitation Act of 1973 assigns the Department of Labor responsibility for ensuring that Federal contractors do not discriminate against handicapped persons in their employment practices. The Secretary of Labor is mandated to administer and oversee an extensive program to eliminate employment discrimination by government contractors, subcontractors, and construction contractors working on Federal and federally assisted construction projects.

The Secretary of Labor has delegated the authority for carrying out the responsibilities under the orders to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within the Department of Labor. The Director of OFCCP has delegated some authority to enforce contract compliance regulations to contracting Federal agencies, but this authority is to be exercised only under the Director's general guidance and control. The Executive orders empower the Secretary of Labor to require contractors with Federal contracts including the equal opportunity clause to submit all information and reports concerning their employment policies, programs, and statistics which are deemed necessary to determine compliance. OFCCP regulations, however, require only that contractors report regularly the number of employees, by race, sex and ethnicity, in nine major job categories. This reporting requirement is limited to those firms with: (1) contracts of $50,000 or more and with 50 or more employees, and (2) 100 or more employees; it does not apply to any facilities of State and local governments except medical and educational facilities. By the same token, there is no OFCCP requirement for the filing of regular reports on affirmative action activities, although records must be maintained and made available on request.

The Equal Pay Act (EPA). This Act requires that men and women receive equal pay for equal work, and is administered by the Department of Labor. Provisions of the EPA apply to all employers who are engaged in commerce or in the production of goods for commerce, to all public agencies, and to any retail or sales estab-

lishment. To enforce the EPA, the Department of Labor may investigate possible violations of the law, conciliate or negotiate a settlement where violations are found, and litigate those instances where efforts to secure compliance have failed. To perform investigations, the Department of Labor may examine and take copies of documents such as payrolls, records of employment, personnel evaluations, and any other employee records that may have a bearing on an investigation.

The Equal Employment Opportunity Commission (EEOC) is the Federal agency responsible for enforcing title VII of the Civil Rights Act of 1964, prohibiting discrimination in employment. As amended, the act provides EEOC with authority over private employers, employment agencies, labor organizations, joint apprenticeship committees, State and local governments, and educational institutions. Under the act, employers are forbidden to refuse to hire, or to discharge individuals, on the basis of race, color, religion, sex or national origin. Further, employers may not discriminate against employees with respect to compensation, terms, conditions, or privileges of employment. To enforce these and other provisions of the Civil Rights Act, EEOC may investigate charges of discrimination, attempt to resolve them through conciliation, and file and prosecute lawsuits where conciliation efforts fail.

EEOC also has the responsibility of prescribing the recordkeeping requirements for those subject to the Civil Rights Act. Each employer and labor organization having 100 or more employees or members must prepare and submit to EEOC, on a yearly basis, an Employer Information Report Form or a Local Union Equal Employment Report. These reports contain information regarding the racial, ethnic, and sex make-up of the work force. EEOC is expected to compile this information and issue periodic reports summarizing the data. Unfortunately, few reports have been published or used on a timely basis.

Under the provisions of the Age Discrimination in Employment Act of 1967, employers are prohibited from refusing to hire, or discharging individuals, or otherwise discriminating against employees with respect to their compensation, terms, conditions, or privileges of employment because of their age. The law further provides that it is unlawful for an employer to limit, segregate, or classify his employees in any way which would deprive or tend to deprive any individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's age. Similar provisions of the act, which covers persons who are at least 40 but less than 65 years of age, are applicable to employment agencies and labor organizations. The Secretary of Labor is empowered to make investigations and to require the keeping of records necessary or appropriate for the administration of this act. The Wage and Hour Division in the Employment Standards Administration is responsible for enforcement of the Age Discrimination in Employment Act, and for reporting annually to the Congress on the status of litigation and progress with respect to the provisions of the law. The Office of Administrative Management produces statistical reports on the nature and outcomes of age discrimination cases. These statistical summaries, which contribute to the annual report, are compiled from the Age Discrimination in Employment Act Compliance Action Reports which are completed by Wage and Hour Area Office staff in conjunction with their investigations of specific complaints and other possible violations of the law. More generalized statistical surveys to determine compliance with the law are not included in the age discrimination in employment enforcement program.

Thus, in the area of employment alone, there is no single agency or Department which can speak for the Federal Government. The assignment of authority to a number of agencies has resulted in the issuance of inconsistent policies and the development of independent and uncoordinated compliance reporting programs. This fragmented administrative procedure has resulted in duplication of effort, inconsistent findings, and failure to meet many of the purposes of the civil rights legislation.

Housing.—Executive Order 11063, issued in November 1962, constituted the first significant Federal requirement on nondiscrimination in housing. Under this order, discrimination is prohibited in the sale or leasing of all federally assisted housing. The order's prohibition also extends to lending practices insofar as those practices relate to loans insured or guaranteed by the Federal Government.

The responsibilities of the Department of Housing and Urban Development (HUD) were

significantly expanded to include private, nonfederally assisted housing under the provisions of title VIII of the Civil Rights Act of 1968 (the Federal Fair Housing Law). As amended, title VIII prohibits discrimination because of race, color, religion, national origin, or sex in the sale or rental of most housing, and makes it unlawful to discriminate in advertising the sale or rental of housing, the financing of housing, or in the provision of real estate brokerage services. HUD is responsible for the overall administration of this title, and is specifically charged with investigating complaints of discrimination.

Racial and ethnic data for most HUD programs, including public housing and some multifamily and single family housing programs, are collected on applications and reports. For example, interim progress reports on affirmative marketing by builders are submitted to HUD area and insuring offices. These data can be tabulated for entire HUD regions and for particular counties, Standard Metropolitan Statistical Areas, and even smaller areas. Monthly sales and occupancy reports for individual projects required by affirmative marketing regulations are also provided to HUD field offices. FHA (Federal Housing Administration) economic market analysis divisions in the field offices periodically compile demographic data, including racial and ethnic statistics for counties, to analyze in conjunction with the sales and occupancy reports.

To ensure nondiscrimination in the financing of housing, the Federal financial regulatory agencies collect racial and ethnic information from loan applicants. This information is used in conjunction with Census tract data on the general statistical characteristics of the population to ascertain if the regulated loan makers are granting loans to minorities only in minority areas and to nonminorities only in nonminority areas. This data can later be correlated with information on whether or not the loan was approved to determine whether or not the lending institution's acceptance or rejection of loan applications has been discriminatory.

Responsibility for ensuring civil rights compliance in housing is vested in a single agency; thus, the task of developing and implementing a comprehensive, coordinated data collection program has been substantially simplified. Although there does not exist a comprehensive civil rights data collection and analysis program in support of a HUD regulation or racial and ethnic data collection, the Department has taken the initial step of completing a study of civil rights data needs for its major programs. Recommendations resulting from this study address the needs for the allocation of adequate resources and for the development and implementation of policy standards and guidelines for the collection and use of civil rights data in major HUD programs.

Public Accommodations and Public Facilities.—Title II of the Civil Rights of 1964 prohibits discrimination in places of public accommodations, such as hotels, restaurants and theaters; under title III of the same act, discrimination in the use of public facilities, such as publicly owned or sponsored parks, beaches, swimming pools, golf courses and the like is prohibited. Principal responsibility for enforcement of the public accommodations and public facilities provisions rests with the Department of Justice. Under title II, the Attorney General may initiate an action on his own, but under title III, the Attorney General may institute litigation only on the basis of a written signed complaint. Efforts by the Justice Department to enforce the requirements of these titles have been concentrated on litigation; there has been little effort by the Department to seek out possible violations through the use of data collections or other means.

The provisions of titles II and III cover a broad range of public establishments. The lack of a systematic program of data collection substantially reduces the ability of the Department of Justice to monitor progress, identify problems, or enforce the law. Standards for recordkeeping by establishments subject to the provisions of these titles should be promulgated by the Department of Justice. Efforts should simultaneously be made to determine the need for and contents of a data collection system. The analysis of data provided by the establishments could serve as a vehicle for the determination of possible violations of title II and, if the powers of the Attorney General with respect to title III are changed, the information could serve a similar purpose in determining target establishments for investigation.

Voting.—The Voting Rights Act of 1965 assured the right to vote by suspending literacy tests and other discriminatory qualifications for six States overall and for 40 counties within a seventh State. Under the Voting Rights Act, the

Attorney General has authority to appoint voting examiners to register individuals in cases where it does not appear that local officials are willing to do so. The Attorney General also has the duty to review and approve proposed changes in voting qualifications or procedures of any State or subdivision covered by the act.

As amended by Public Law 94–73 in 1975, the Voting Rights Act requires the Director of the Bureau of the Census to conduct biennial surveys, in congressional election years, of registration and voting in every state or political subdivision determined to fall under the requirements of the act. Public Law 94–73 specifies that the survey shall provide, for each State or political subdivision selected, a count of citizens of voting age, the race or color and national origin of the individuals, and a determination of the extent to which such persons are registered to vote and have voted in the elections surveyed. Jurisdictions covered include:

(1) those where more than 5% of the citizens of voting age are members of a single language minority;

(2) those where less than 50% of the citizens of voting age voted in the Presidential election of 1972, and

(3) areas previously covered under the 1965 Act and recovered by the 1970 Amendments.

The Congress is expected to use these data, which were collected for the first time begining in November 1976, to judge the effect of the Voting Rights Act and to determine the need for extension or expansion of its special provisions. Any assessment of the effectiveness of the data collection and analysis must await completion of its initial application.

Education.—The Office of Civil Rights (OCR) in the Department of Health, Education, and Welfare (DHEW) is responsible for monitoring federally funded public elementary and secondary school districts and nonpublic schools benefiting from Federal programs, to ensure compliance with title VI of the Civil Rights Act of 1964 and title IX of the Education Amendments of 1972. Section 601 of title VI provides:

> "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Title IX of the Education Amendments of 1972 in effect amends title VI to include a similar prohibition against discrimination based on sex.

The OCR headquarters staff collects data and provides review and policy guidelines to the OCR field offices. Regional staff have the primary responsibility for conducting compliance reviews of school districts, investigating complaints, negotiating corrective action and selecting and monitoring the districts under the Emergency School Assistance Act. As a basis for targeting its efforts and establishing priorities for Federal efforts, and for determining possible cases of noncompliance, OCR annually conducts a survey of school systems and schools. Respondents are asked for information which will enable OCR to make general assessments of the schools' compliance with title VI of the Civil Rights Act and title IX of the Education Amendments of 1972, as well as for data concerning their compliance with section 504 of the Rehabilitation Act of 1973 which provides:

> "No otherwise qualified handicapped individual . . . shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Under a cooperative agreement, data on elementary and secondary school faculty is collected by the Equal Employment Opportunity Commission. Differing collection and processing methodologies employed by EEOC have resulted in difficulties in using the data collected. Further liaison and coordination will be required to improve the output of this cooperative venture.

In the area of higher education, OCR is likewise responsible for assuring that institutions which receive Federal support are in compliance with relevant civil rights statutes. These include the several authorities discussed above under elementary and secondary education and, in addition, titles VII and VIII of the Public Health Service Act, and Executive Order 12246 as amended by Executive Order 11375. The Comprehensive Health Manpower Training Act of 1971 and the Nurse Training Act of 1971 (titles VII and VIII of the Public Health Service Act) prohibit the extension of Federal support to any medical, health or nursing program unless the

institution providing training submits satisfactory assurances that it will not discriminate on the basis of sex in the admission of individuals to its training programs. Executive Order 11246, which was issued in 1965 and amended in 1967, requires all institutions having contracts with the Federal Government not to discriminate in employment on the basis of race, color, sex, religion, or national origin, and to take affirmative action to ensure that equal employment practices are followed at all facilities of the contractor. The Office of Federal Contract Compliance Programs, which is responsible for the implementation of the Executive orders, has assigned DHEW the responsibility for ensuring that educational institutions are in compliance.

OCR's responsibilities in higher education include conducting compliance reviews of colleges and universities, negotiating appropriate corrective action, investigating individual complaints of discrimination, and clearing health manpower and nurse training grants. The major source of data for uncovering possible violations of the applicable civil rights authorities is OCR's biennial collection of data (currently in cooperation with the National Center for Education Statistics) on enrollments and degrees awarded by race and sex in the Nation's colleges and universities.

The Office of Civil Rights' recordkeeping and data collection program has been the subject of considerable concern. While it is clearly necessary to ensure that the schools and institutions are not engaging in discriminatory practices, the frequency and detail of data maintenance and collection have placed considerable burden on the respondents. The combining of some OCR data requirements with other educational surveys was intended to reduce respondent burden; the products of these joint ventures have not yet been evaluated to determine whether the stated objective has been accomplished. Furthermore, there is concern about the appropriateness of a statistical agency (in this case, NCES) collecting regulatory data which will be used primarily for assessing compliance. OCR should: (1) develop definitions as to what constitutes discrimination in education programs; (2) place high priority on efforts to determine what statistical data are necessary to locate possible cases of discrimination; and (3) streamline the data collection program to require the transmission of information to the national office only as frequently as its staff will be able to thoroughly analyze and make use of the information provided. These determinations should be published in the Federal Register to permit comment from interested parties.

Participation in the Benefits of Federally Assisted Programs.—The provisions of title VI of the Civil Rights Act of 1964 are applicable to more than 400 Federal programs administered by some 25 agencies. Federal assistance covered by title VI includes grants and loans; donations of equipment and property; sale, lease of, or permission to use Federal property for nominal considerations; and any other arrangement by which Federal benefits are provided. In general, title VI is applicable to Federal assistance which is received indirectly by the intended beneficiaries, through intermediaries such as State and local governments. Federal officials in the Departments of Agriculture; Health, Education, and Welfare; the Interior; Justice; Labor; and Transportation are responsible for ensuring that their respective programs are not operating in violation of title VI. Most of these agencies oversee title VI compliance through such activities as data collection, compliance reviews and complaint investigations.

A limited discussion (see Appendix) of agency responsibilities and activities with respect to ensuring compliance with title VI of the Civil Rights Act of 1964 in the distribution of benefits under federally assisted programs serves to demonstrate the disparities in the data collection efforts in a small subset of the more than 25 agencies involved. The variable data collection requirements imposed by the several agencies not only are indicative of the broader problem of a lack of uniform Federal standards for compliance with title VI, but also represent a problem in and of themselves. In many cases, for example, single State or local agencies are the recipients of multiple, conflicting and sometimes duplicative requests for civil rights compliance data ostensibly designed to ensure that the recipient agency is operating in accordance with the provisions of title VI of the Civil Rights Act of 1964.

Coordination of the title VI enforcement efforts is assigned to the Attorney General and is executed by the Civil Rights Division of the Department of Justice. Executive Order 11247, issued in September 1965, conferred on the Attorney General the responsibility to assist Fed-

eral Departments and agencies in coordinating their programs and activities, and adopting consistent and uniform policies, practices and procedures for the enforcement of title VI. Under this order, which did not clearly provide authority to the Attorney General to direct the agencies to take specific compliance and enforcement actions, implementation by the Department of Justice was limited.

Early in 1974, Executive Order 11247 was superseded by Executive Order 11764. The new order stated that agencies extending Federal financial assistance have primary responsibility for enforcing the provisions of title VI, and clarified and broadened the role of the Attorney General. Under Executive Order 11764, the Attorney General was directed to coordinate agency enforcement of title VI, and to prescribe standards and procedures for the implementation of the law.

Implementation of the broad authorities delegated to the Attorney General with respect to title VI has lagged. More than two years after the issuance of the Executive order, in July 1976, the Department of Justice published its initial proposed rules setting forth minimum standards for Federal agencies in implementing title VI. These rules, which are intended to cover all aspects of title VI activity by the Federal agencies, include prescriptions for data collection.

If properly refined and adequately administered, the regulations could assist substantially in upgrading recordkeeping and reporting requirements to meet the mandate of title VI. To reach this level of effectiveness, the regulations must require:

(1) that the responsible Federal agencies systematically develop the measures that will be used to determine discrimination, and the data required in support of such determinations; and

(2) that specific Federal agencies be assigned responsibility for coordinating compliance recordkeeping and reporting requirements in areas where multiple agencies provide resources or benefits to the same recipients.

If these conditions are incorporated in the proposed title VI regulations, a significant step foward toward improving civil rights data collection with respect to Federal programs can be made. Coupled with the lack of standardization in reporting and recordkeeping requirements to meet the mandate of title VI, however, are the diverse, uneven reporting requirements imposed by agencies having responsibility to oversee other titles of the Civil Rights Act, additional congressional mandates, and assorted regulations, court orders and Executive orders.

The data requirements which may result from the more recently enacted Age Discrimination Act of 1975, for example, are yet to be determined. This act, which provides that:

> "No person shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving Federal financial assistance,"

requires the Department of Health, Education, and Welfare to develop by January 1979 general regulations to carry out the provisions contained in the law. The Commission on Civil Rights is currently conducting the study mandated by the act which is designed to determine cases of unreasonable discrimination based on age in programs and activities receiving Federal financial assistance and to identify any Federal programs or activities in which there is evidence of discrimination based upon age. The report stemming from this study is expected to be completed by November 1977. The results of the Commission's study, and the regulations under development by DHEW, may well lead to further prescriptions for civil rights data to assess discriminatory practices with respect to age. Thus, although it is anticipated that the title VI regulations, when implemented, will contribute to solving some of the problems cited, much further work remains to be done in the area of civil rights data collection.

Policy Recommendations and Steps to be Taken

A system for monitoring the effectiveness of Federal civil rights initiatives must rely to a substantial degree on the availability and use of accurate, current, and complete data on the race, ethnic origin, and sex of potential and actual beneficiaries. Where applicable, data systems must also include such additional information as the presence of handicapping conditions, age of the individuals involved, and other appropriate characteristics. Nationwide data can provide

statistical indicators of possible noncompliance at the most general level. More tailored statistical information can be used to ascertain possible individual cases of noncompliance which merit further investigation.

The civil rights data collection activities of the Federal Government have become a major cause for concern. There is serious debate as to whether or not the data collection mechanisms being employed effectively identify problems or suggest sollutions. The Federal agencies themselves appear uncertain concerning the appropriate scope and standards for their data collection activities; moreover, there is inadequate staff capability to use the volume of data which is collected. The foregoing discussion of the issues, and of the agencies and programs involved in civil rights data collection, points clearly to the need for the development of standards for civil rights recordkeeping and reporting which will provide data which are sufficient and appropriate to identify discriminatory practices and to ensure that benefits are distributed equitably to eligible recipients.

The recommendations which follow are proposed as necessary precursors to the improvement of individual program, agency and departmental civil rights data collection and utilization efforts. The processes and products which would result from these government-wide initiatives would produce the framework and guidelines necessary for agency and departmental development and modification of particular data systems to meet the purpose and intent of civil rights requirements.

First, it is recommended that an interagency task force coordinated by the Office of Management and Budget and the General Accounting Office be established to develop standards necessary for improved civil rights data collection, reporting, and use. Under the Budget and Accounting Procedures Act, OMB is responsible for developing programs and issuing regulations for the improved gathering, compiling, and analyzing of statistical information; under the provisions of the Federal Reports Act and the amendments to the Trans-Alaska Pipeline Authorization Act, OMB and GAO share the responsibility for clearance of recordkeeping and reporting requirements which include civil rights information. The task force, which should be established at the earliest possible date, should include representatives of Federal Departments and agencies responsible for the broad areas of housing, education, health services, employment, voting, the administration of justice, and access to public accommodations. In addition, the task force membership should be supplemented to include representatives from other agencies responsible for ensuring compliance with title VI of the Civil Rights Act. Small working groups of the interagency task force representatives may appropriately be assigned responsibility to complete the specific tasks outlined below and to recommend products for endorsement by the entire task force.

OMB and GAO should jointly review the effectiveness of existing guidelines in the area of civil rights data collection and use, and should require of the agencies reports on the current status of and proposed improvements to their civil rights data collection efforts. OMB and GAO should be ordered to coordinate the development of the needed standards, and should ultimately be responsible for the development of circulars on civil rights recordkeeping and reporting requirements. Following publication of the circulars, OMB and GAO should oversee the implementation of the standards developed in the affected agencies. This continuing oversight should include activities to:

1. periodically review and evaluate the agencies' civil rights data collection and analysis programs, and their implementation of the standards and guidelines;
2. revise and update the general standards and guidelines as necessary, and sponsor studies in the development of standards for civil rights data collection;
3. maximize the exchange of information among agencies to encourage increased commonality of civil rights data; and
4. minimize the duplication of civil rights data collection and processing activities.

Second, it is recommended that the interagency task force accept as its initial responsibility the development of guidelines for Federal civil rights recordkeeping and data collection plans. Inherent in the uneven and discrepant civil rights data collection activities now conducted by various Federal agencies are basic problems stemming from the lack of systematic planning for the use of information obtained. Within one year following the formation of the interagency task force, guidelines for the maintenance, collection and use of civil rights

data should be developed. The guidelines should require each Federal agency to stipulate how noncompliance will be determined, and what data will be needed for this purpose. To the degree possible, the guidelines should set forth examples which will assist individual agencies in developing their respective plans. OMB and GAO should be responsible for promulgating the proposed guidelines for comment, and making appropriate revisions. Each affected agency should be responsible for submitting to OMB or to GAO, as appropriate, its plan indicating what civil rights data will be required and how the information will be used to determine compliance. The agency plans, which should stipulate what data should be maintained at the reporting unit level and what data should be forwarded, how frequently, to the national level, should be completed within 6 months after the final publication of the guidelines.

Third, it is recommended that the interagency task force conduct studies leading to the development of standards for civil rights data collection and use. The standards to be developed and applied should include:

1. The specification of appropriate statistical measures of discrimination;
2. The specifications of appropriate vehicles for the statistical measurement of discrimination;
3. Policies delineating the respective roles of the several Federal Departments and agencies in the collection, analysis, and use of civil rights data; and
4. Guidelines for State and local government and industry use of nationally produced civil rights data.

The specification of appropriate statistical measures of discrimination, and of appropriate vehicles for the statistical measurement of discrimination, should be completed within two years following the formation of the task force. The policies concerning the roles of the Federal Departments and agencies, and the guidelines for State and local Government and industry use of nationally produced civil rights data, should be completed by the end of the third year of task force operation. Further discussion of the problems to be addressed and the dimensions of solutions to be developed in the design of these standards follows.

The specification of standards for the measurement of discrimination through statistical techniques must answer a series of questions relating to the appropriate depth for civil rights investigations and the level of detail needed to determine possible cases of noncompliance. In terms of Federal programs alone, a true measure of the effectiveness of a given initiative would require racial, ethnic, and sex data, as well as information on age and handicapping conditions, not only in the program beneficiaries but also on the applicants and, to be complete, on the eligible population. With data on the race, ethnicity, sex, age, and handicapping conditions of persons eligible, persons applying, and persons participating, it would be possible to determine not only whether minorities and females were selected to participate in equitable ratios, but also to answer a number of other significant questions. These analyses would indicate: (1) whether information about Federal programs is reaching all intended beneficiaries; (2) whether specific racial, ethnic, age or other groups perceive or encounter barriers in applying for assistance; and (3) whether adequate resources are available to serve the needs of the eligible population. The addition to this data bank of information on the quality and quantity of the benefit received would further enhance an agency's ability to determine the extent to which the target groups for civil rights activities receive an equitable share of program goods or services.

To obtain these data sets across all Federal programs, let alone to ensure that the information collected would be analyzed and used, would be a monumental undertaking. It is incumbent upon the interagency task force to determine reasonable, yet significant improvements which can be made without developing an agenda so ambitious that the affected agencies will be unable to progress systematically and effectively. As a first step in fulfilling this objective, the task force should sponsor an independent study to determine standards for what constitutes discrimination and to develop the associated statistical measures which are needed as indicators of possible discrimination. The results of this study, which should address problems of the full range of discriminatory practices (i.e., discrimination related to race, ethnicity, sex, age, and handicapping conditions), should pave the way for standards development by the task force.

In setting standards for civil rights data collection with respect to Federal programs it is recommended that the interagency task force limit the scope of beneficiary information to the collection of racial, ethnic, sex, age, and handicap data on program applicants and program beneficiaries. Measurements of the eligible population, if conducted by individual program agencies, should be limited to the development of estimates based on sample studies. To complement these agency efforts, the Bureau of the Census should work more closely with the program agencies so that Census studies of the population will contain more appropriate information concerning the eligible populations and their needs. Individual agencies cannot reasonably be expected, nor should they undertake, to conduct separate censuses as a means of determining persons eligible to participate in their respective programs. The agencies could, however, adjust their requirements to make them compatible with Census information for purposes of historical trend analyses to measure progress (or lack of progress) in eliminating discrimination.

With respect to the level of detail needed to determine civil rights compliance, standards should be established concerning (1) the appropriate level for investigation and reporting (for example, in higher education should the unit be the school campus or the field of study); and (2) the target groups for which data should be reported (for example, some agencies collect data on minority vs. nonminority participation, while others require information on several defined minority populations). The proposed revision of Exhibit F of OMB Circular No. A-46 will address the target group question.

In terms of the appropriate depth of investigations, standards should be established concerning the degree to which the "readily apparent" (for example, staffing patterns or enrollment ratios) should be measured, in contrast to "background factors." Requirements to measure background factors which may be responsible for inequitable participation in programs and services would vary by the type of program under investigation. Some examples would include: (1) questions of access and choice in the selection of educational opportunities; (2) examinations of applicant flows, new hires, promotion patterns, wage differentials, and the like in industry; and (3) efforts to collect data on prior training or experience of individuals which may impact upon their current status. Clearly, such background factors must be measured to obtain an accurate assessment of the degree to which discriminatory practices are being employed. At the same time, it is unreasonable to suggest that such studies should be undertaken except with respect to specific investigations. Even at the case study level, however, standards for data collection are required. The interagency task force should sponsor efforts to study and develop recommendations in this area.

The specification of appropriate vehicles for the measurement of discrimination must, in many ways, build upon the standards for the measurement of discrimination. Nevertheless, it is possible to pose a number of concerns which must be addressed in the development of Federal standards for mechanisms to be used to collect civil rights information. The first concern with respect to the determination of appropriate vehicles for the collection of civil rights data is the development of a position on the advisability of combining compliance reporting requirements with voluntary statistical surveys. Public and private agencies which receive Federal resources respond to both types of inquiries for the Federal Government. While every effort should be made to reduce the burden on respondents, the statistical agencies should not collect regulatory data which can be used to affect the rights, privileges, or benefits of the individual or the institution. Rather, the compliance agencies should provide appropriate statistical summaries of their information to other Federal users so that duplication can be minimized.

Beyond this issue, there remain several concerns whose resolution will require further study. First, a determination should be made concerning the adequacy of relying on reports of the regulatory agencies, using information provided by intermediaries such as educational institutions, employers, and the like to assess civil rights compliance. The need to obtain additional reports from the affected individuals should be considered.

Second, the interagency task force should establish guidelines which indicate when recordkeeping, rather than reporting, should be used as the vehicle for recording compliance data, as well as guidelines concerning the appropriate frequency for reporting of statistical data to the Federal level. Too often, State and local governments have been required to aggregate

and report to the Federal level information which will be used only in an on-site investigation of a specific complaint.

Third, the appropriateness of using administrative records as a vehicle for assessing discrimination should be examined. Inherent in this practice would be the need to develop policies which would enable the Federal government to strike a balance between obtaining data needed for policymaking and for completion of investigations, and insuring against negative effects brought on by "labeling" of individuals and violations of the individual's right to privacy. The trade-offs between obtaining improved data, and increasing reporting burden as well as requesting sensitive data, must be examined.

Finally, many respondents are required to file multiple compliance reports. It is recommended that the interagency task force: (1) develop uniform compliance reporting standards for Federal benefit recipient agencies and (2) develop methods for interagency sharing of these reports at the Federal level to eliminate duplicative requirements. This effort should build upon the recently developed title VI guidelines, expanding and refining the proposed rules where necessary.

When the appropriate scope and vehicles for civil rights data collection activities at the Federal level have been determined, the interagency task force should provide leadership in developing policies delineating the respective roles of the several Federal Departments and agencies in the collection, analysis, and use of civil rights information. At the present time, some responsibilities are left unaddressed while others are handled by multiple agencies, resulting in duplication at both the Federal and the recipient agency levels. The interagency tasj force should not only determine how the civil rights data collection responsibilities should be divided among the Federal Departments but should also recommend appropriate mechanisms for coordinating the activities of the agencies involved. In addition, the interagency task force should develop recommendations with respect to intradepartmental responsibilities for civil rights data collection and analysis, and should specifically consider the question of whether program offices or independent compliance enforcement units should perform these functions. Appropriate legislation to carry out these recommendations should be developed.

Finally, when an improved Federal program of civil rights data collection is implemented, the *interagency task force should develop guidelines for State and local government and industry use of the information produced at the national level.* Too often, compliance reporting as well as broader surveys of the status of target groups are viewed as ends in themselves. Across the board, the Federal agencies have expended far too little effort in determining the use to which civil rights data will be put, and a disproportionately large share of their available resources on collecting data. Indeed, it may be postulated that data collection activities have been used at times in lieu of other management initiatives which might better serve to change the behavior of the industries, agencies, or institutions involved.

In developing standards of civil rights data scope, quality, and uniformity, the interagency task force should establish and conduct its business according to a single principle: That the development of every requirement and standard of civil rights data collection and analysis be preceded by a clear specification of how the information will be used, by whom, at the Federal level, and a complementary explanation of how the data can be used by respondents to improve their affirmative action programs.

Appendix

REVIEW OF SELECTED TITLE VI DATA COLLECTION PROGRAMS

To measure the extent to which benefits are provided to minorities equitably, data on the race and ethnicity of the applicant and beneficiary populations must be collected and analyzed. The degree to which this requirement is met by agencies responsible for the administration of title VI varies. The discussion which follows highlights the current status of selected Federal title VI data collection programs.

At the Department of Agriculture (USDA), which has one of the most comprehensive Federal data collection requirements concerning program participation, each constituent agency is required to collect extensive racial and ethnic data to ensure that all eligible recipients have equal access to the benefits of USDA programs. Each agency must:

(1) enumerate eligible participants;

(2) establish a system for collecting and reporting racial and ethnic data on participation;

(3) review programs periodically to ascertain the extent of minority group participation, as measured against equal opportunity objectives and measurable targets; and

(4) report annually on progress in meeting identified objectives.

In addition, USDA's title VI regulation requires recipients to:

"keep such records and submit to the Agency timely, complete and accurate compliance reports . . . to ascertain whether the recipient has complied . . . In general, recipients should have available for the agency racial and ethnic data showing the extent to which members of minority groups are beneficiaries of Federally assisted programs."

In addition to its efforts in education, the Department of Health, Education, and Welfare is responsible for enforcement of title VI in major health and social service activities including Medicare, Medicaid and a variety of categorical grants for health and welfare aid which are funded through State health and welfare agencies. DHEW's regulation states that both "discrimination in the selection or eligibility of individuals to receive the services, and segregation or other discriminatory practices in the manner of providing them, are prohibited."

Since 1973, DHEW's title VI regulation has required recipients of DHEW funds to collect racial and ethnic data on the beneficiaries of DHEW programs. In addition to imposing recordkeeping requirements, DHEW also conducts periodic surveys of hospitals and nursing homes to determine which medical facilities should be reviewed thoroughly.

DHEW has not collected comparable racial and ethnic data from State agencies on a nationwide scale. Although comprehensive guidelines were developed in 1975, they have not yet been approved by the Office of General Counsel. DHEW has not instructed State agencies to collect and maintain racial and ethnic data on the beneficiaries, applicants and potential beneficiaries of each DHEW-funded program they administer or which is administered by their subrecipients. For example, it has not directed that data must be kept by each vendor separately rather than for the State agency as a whole, or that data must be gathered separately for various racial and ethnic groups. Further, DHEW has not instructed the State agencies to tabulate racial and ethnic data by type or amount of benefit, nor has it indicated how frequently such data should be collected.

The Department of the Interior operates several programs which are subject to title VI of the Civil Rights Act of 1964. Until 1974, however, the Department had not identified the title VI implications of most of these programs. The Interior Department requires that applicants and recipients collect and maintain racial and ethnic data showing the extent to which members of minority groups and women participate in federally assisted programs. These data may be estimates or actual counts, and are required to be done on a visual basis only. No provision is made regarding who is responsible for collecting the data, nor is there any requirement that the data be forwarded to Interior on a regular basis.

The Law Enforcement Assistance Administration (LEAA) of the Department of Justice provides funds and technical assistance to State and local governments for reducing crime and juvenile delinquency and for improving criminal justice. Both title VI and the Civil Rights Act and the Omnibus Crime Control and Safe Streets Act, as amended, prohibit discrimination on the grounds of race, color and national origin in services provided by LEAA-funded programs. The Crime Control Act also prohibits discrimination on the ground of sex in services provided by LEAA-funded programs. In terms of using data collection forms to determine compliance, LEAA has taken the position that "such forms can provide data useful in its compliance programs, but such forms should be utilized only where it can be projected that the data generated will be reasonably reliable and productive of information from which significant statistical disparities by race and sex, may be gleaned."

The biennial Civil Rights Compliance Form was developed for completion by State and city police departments and highway patrols. It focused almost entirely on employment matters, and was primarily concerned with the tabulation of race and ethnic origin by sex and rank of police department employees. When this survey was found to be too costly compared to its use-

fulness and reliability, it was discontinued. The limited data collected by EEOC is now used as a substitute.

LEAA has developed also a compliance report to monitor community-based and other correctional facilities. This form does not cover certain key areas, including services provided by contractors and subcontractors, information on patterns of assigning minority group members to correctional facilities, or the areas of disciplinary actions and special privileges, parole procedures, or special services for particular groups. Finally, the form does not call for the collection of data on specific minority groups.

The Employment and Training Administration of the Department of Labor provides financial assistance to State employment security agencies, and gives similar aid to State and local governments to operate manpower training programs. The operations of the State employment service and unemployment insurance offices are subject to the provisions of titles VI and VII of the Civil Rights Act, as well as other regulations and directives which require nondiscrimination in State employment security systems.

The Department of Labor's principal source of nationwide data on State security systems and manpower training activities is the Manpower Operating Data System. The data are submitted by each local office to the State employment security offices, which process the data and submit them on a monthly basis to DOL's regional offices. Data on the number of referrals and placements for various fields of employment are maintained by race and ethnic origin, cross-tabulated by sex. Despite the seeming usefulness of this system, it is less than ideal because the data are not comparable from State to State, and the employment categories are too general to be used to determine whether applicants are being placed according to their qualifications.

Title VI of the Civil Rights Act, as well as section 162(a) of the Federal Highway Act of 1973 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 prohibit discrimination in activities funded by the Federal Highway Administration (FHWA) of the Department of Transportation. FHWA has the responsibility to ensure that minorities and women are not denied the benefits of assistance, and the concomitant responsibility to ensure that its programs do not exert a disproportionately negative impact upon these groups. Despite these broad responsibilities, FHWA has concentrated its civil rights program on issues such as minority employment in highway construction projects and satisfactory relocation of minority displacees.

The State agencies receiving FHWA funds are required to develop and implement plans for meeting their title VI responsibilities. Included in the specifications are requirements to collect racial and ethnic data on the program beneficiaries. A comprehensive system for collecting racial and ethnic data to evaluate title VI compliance for FHWA projects has not been developed. The Urban Mass Transportation Administration, another component of the Department of Transportation subject to the provisions of title VI of the Civil Rights Act, has likewise failed to develop a system for racial and ethnic data reporting.

PROFESSIONAL STAFFING AND PROFESSIONAL STAFF TRAINING

Introduction

There is great concern in the statistical establishment inside and outside of the Federal Government about continuing, maintaining, and, where necessary, upgrading statistical expertise throughout the Federal Government. Methods for maintaining and upgrading statistical expertise are proposed after a description is given of current and past programs to accomplish this objective. This objective involves fully developing the potential of the professionals in the Federal statistical community so as to maximize efficiency and productivity in the entire Federal Statistical System.

In addition, this chapter will describe the number and distribution of statistical personnel in the Federal Government. Statistical personnel

are dispersed throughout the Government. A great percentage, as can be expected, are located in the 38 major statistical agencies which are identified in the organization chapter of this Framework, and in a subset of these 38 which comprises the five major statistical collection centers. There are also substantial expenditures for statistical personnel outside of these 38 agencies. By comparative analysis, some agencies are lacking either in statistical professionals or statistical support personnel or both, relative to their roles and missions.

Overcoming the problem of inadequate numbers of statistical personnel is first and foremost an organizational issue. Once proper numbers of professionals and support personnel are assigned to statistical activities, the job becomes one of education and training in order to maintain and upgrade skills.

This chapter largely addresses professional staff training proposals for employees of the five major statistical collection centers, the Bureau of Economic Analysis in the Department of Commerce, and the Statistical Policy Division of the Office of Management and Budget. In many respects, the lack of statistical professionals in nonstatistical program agencies is a problem which is of even greater concern to the statistical establishment; however, training proposals for employees of the nonstatistical program agencies are not the subject of this paper.

Identification of the Programs

There have been various kinds of professional staff training programs in operation at various times in the major statistical centers.

The most extensive program started in 1963 in the National Center for Health Statistics (NCHS). It ended in 1974 (the last class began in 1973). This one-year work-study program, known as the Junior Professional Training Program, prepared entry level (GS-5 or 7) professionals to be professional statisticians. The trainees were employed right out of school, after college or graduate education. They were rotated to three major substantive assignments in three different divisions of NCHS as well as to short assignments in the administrative division and the computer division. In addition, they participated in weekly seminars ranging from the organization and subject matter of NCHS and its divisions and programs to topics relating to statistical methodology. They took a one-week writing course through ASTI (discussed below) and a 2-week report writing and analysis course in-house. There were approximately ten trainees in each class. Financially-supported after hours academic training was available, but optional. At the end of the year, the trainee was placed in a divisional assignment of his choice, with the concurrence of the affected division director and the senior staff of NCHS.

Near the end of the program, the thrust of the effort focused on recruiting and preparing minorities for professional employment in NCHS. The program was discontinued since a register of statisticians had been established by the Civil Service Commission, and there were enough qualified and interested entry level statisticians for employment in NCHS and elsewhere in the Federal Government.

The professional training program most similar to that of the NCHS was in the Bureau of the Census in the Department of Commerce, however, the Census Bureau program, known as the Statistical Intern Program, differed in some important ways. First, the Census Bureau program was for statistical personnel already under the employ of the Census Bureau. GS-7–11 employees (versus GS-5s and 7s in NCHS) with one or more years of Federal experience were eligible to apply. Applicants had to be classified as statisticians, mathematical statisticians, economists, or social science analysts. The Census Bureau bulletin which described the program stated that it was "designed to identify junior level employees who display potential for assuming broader responsibilities and to make available to them developmental opportunities which they may not otherwise obtain in their present positions." [1] Selection included a review of education and work experience, supervisory evaluation, a written qualifying examination, and an interview by the selection committee. A maximum of six professionals were selected each year. The program was in existence from 1957 to 1972 (the last class began in 1971). The program was discontinued because the demand for it ceased; the Census Bureau was able to recruit and keep qualified junior professionals. Also, funds for the 1970

[1] U.S., Bureau of the Census, *Census Bulletin*, Vol. XV, No. 23 (November 5, 1965).

decennial census to which this program's funding became tied ended in 1971.

The second major difference between the Census Bureau and NCHS programs was the content of the programs. The NCHS program was structured with weekly seminars. The Census Bureau program included three or four rotational assignments including an option to have an assignment outside of the Census Bureau, in the Commerce Department or elsewhere in the Federal Government. Also, the Census Bureau program more forcefully encouraged after hours academic training. The Census Bureau agreed to financially underwrite one course per semester (spring, summer, and fall).

Another major professional staff training program was developed in the Bureau of Labor Statistics (BLS) over the last 4 years. BLS now has a Division of Training staffed with 50 employees. At least 40 of these 50 employees work on the development and delivery of training programs for BLS' professionals. The major thrust of the program is to train BLS employees in the field offices; however, there are a sizeable number of courses for central office personnel in addition to those for regional personnel. Courses vary in length from a couple of days to 2 weeks. They vary in subject matter from methodological issues such as how to collect price data to analysis and publication presentation of occupational safety and health data. In addition, BLS employees are able to participate in technical seminars which vary considerably in frequency, content and subject matter level. These seminars are not part of the program of the Training Division; rather they are offered at the initiative of the other divisions in BLS.

The Training Division has under development an orientation program for entry level professionals. BLS expects to tailor an individual development program (IDP) for each entry level professional.

The other types of professional staff training under the auspices of the statistical centers are open to a larger number of Federal employees. NCHS funds the Applied Statistics Training Institute (ASTI). ASTI offers a great variety of courses in health statistics not only to NCHS employees, but also to other Federal employees, and employees of State and local governments. Courses generally run about one week in length. The home of ASTI is in the Research Triangle Park in North Carolina although ASTI courses are now given elsewhere in the United States as well.

The U.S. Department of Agriculture (USDA) also offers a great variety of courses but they are not limited only to statistical issues. USDA has an evening graduate school for USDA employees, other Federal employees, and anyone else who is interested. Again, the course fee is minimal. courses, similar to college and university courses, generally run the full length of a semester. Many employees of the Federal Statistical System take USDA courses to brush up on (maintain) or increase their skills.

The National Center for Education Statistics (NCES) in the Department of Health, Education, and Welfare does not have and never has had a formal training program eor its employees. In May of 1971, the Department of Health, Education, and Welfare's Career Service Board for Mathematicians and Statisticians called upon NCES to propose ideas for a program for mid-level career development. In a speech to that group and in a memorandum which circulated within NCES subsequent tothat presentation, attention was given to methods to help professionals grow—"to become more skilled in their present assignments and more versatile and competent, better capable of discharging different or even larger responsibilities—and to have more fun as a result." [2] As a result, the NCES management proposed a series of biweekly professional development seminars (one of the various methods proposed in the speech). Eleven seminar topics were suggested. The management staff was asked to consider other kinds of in-service training as well.

The Bureau of Economic Analysis (BEA) in Commerce and the Statistical Policy Division (SPD) in the Office of Management and Budget (OMB) do not presently nor have they ever had formal professional staff training programs. The present Director of BEA teaches university courses after hours in which BEA professional employees are encouraged to enroll. In addition,

[2] R. Boyd Ladd, "Professional Development," unpublished memorandum (based on a May 17, 1971 speech by Barbara F. Reese to the Department Career Service Boards for Mathematicians and Statisticians), National Center for Education Statistics, Department of Health, Education, and Welfare, May 19, 1971.

a former Deputy Director of SPD used to teach a course about the Federal Statistical System at the USDA evening graduate school.

A few of the major statistical agencies have offered international staff training programs for foreign statisticians. These programs will not be described in this paper because they do not directly contribute to professional staff development in the United States.

Outline of Policy Recommendations

Rotations.[3]—Since entry level professionals (GS-5s and 7s) are new to the Federal Government and the Federal Statistical System, it is proposed that they obtain as broad a view as possible to the scope of activities of the statistical agency to which they are assigned and of other agencies, if possible. The best way to obtain this broad view may be to have rotation programs, similar to those formerly in existence in both NCHS and the Census Bureau. Positions for entry level professionals, before they are permanently placed in divisional assignments, may be included in the ceiling for the Office of the Director of the statistical agency or for the Personnel Division. Rotation to at least three different divisions within the statistical agency to which they are assigned seems desirable. Employees should be given a real work assignment to each rotation. This kind of diversity in substantive experience would also expose employees not only to evaluation and counseling by different supervisors but also to different working environments. Employees would be better prepared to decide what type of work and kind of working environment best suited their interests and talents.

It is also proposed that junior and journeyman professionals in the GS-9–13 grades participate in a rotation program across statistical agencies including the five major centers (the Statistical Reporting Service in USDA, the Census Bureau, NCHS, NCES, and BLS), BEA in Commerce, and the SPD of OMB. Junior and journeyman professionals should be encouraged to rotate (however, rotations should not be mandatory) every 3 to 5 years either within the social sector agencies (NCHS, NCES, the social and demographic side of the Census Bureau, the social statistics side of SPD) or within the economic sector agencies (USDA/SRS, BLS, BEA, the economic side of the Census Bureau, the economic statistics side of SPD). Skills acquired are largely transferable across agencies within a given sector. A rotational assignment within the Statistical Policy Division of OMB would include experience from a different perspective in clearance of proposed survey forms, oversight statistical planning and coordination, confidentiality issues, and budgeting. In any event, if junior and journeyman professionals are reluctant to rotate every 3 to 5 years, consideration should at least be given to one such rotation while they are at the GS-9–13 level. This kind of exposure to the work of another statistical agency should help stimulate the creativity and development of the individual professional.

In addition, a rotation of managers (branch chiefs and division directors) at the GS-14 and 15 level is recommended for consideration by the statistical agencies. Professionals at this level who have a more highly developed knowledge of a particular functional area should be encouraged to rotate within the statistical agency to which they are assigned. Rotations to other management positions within the agency would enhance the professional's breadth and ability to assume top management responsibility and would provide the agency with a more well-rounded managerial staff so that vacancies could be filled without gaps in essential understanding of program areas. Individuals would be more challenged, and constructive participation in program planning for the functional area would be enhanced. Rotations of this nature should occur at more natural junctures, not necessarily every 3 to 5 years, but when appropriate to the individual's or the agency's needs.

In-Service Training.—Work-study programs similar to the former Junior Professional Training Program of NCHS seem most suitable for entry level GS-5 and 7 professionals. The study side of this kind of program should entail not only seminars but also intensive courses in applied statistical techniques, such as sampling, analysis of sample survey data, and report writ-

[3] The terms "entry level," "junior professional," "journeyman" and "manager" as employed here may not coincide exactly with those used by the Civil Service Commission. In addition, the grade levels (GS-5 and 7, GS-9–13, and GS-14 and 15) here associated with these terms are approximate. For example, it is recognized that some entry level professionals are above GS-7, and not all GS-14 level professionals are managers.

ing for Government publications. The study side, the seminars, could either be run by each statistical agency (probably preferable for entry level professionals) or could be conducted on a rotating basis by the six major statistical agencies (the five centers and BEA). Each agency could be responsible for one seminar every 6 weeks. The Statistical Policy Division in OMB could present an orientation seminar for all entry level professionals in the six agencies.

The most critical period for professional development, versus exposure which is important at the entry level is the GS-9–13 level. Junior professionals need to be challenged and developed by giving them practical experience in a variety of applied statistical activities, such as RFP (request for proposals) writing. A seminar series at this level could be conducted biweekly or monthly and also could be run by each statistical agency for its own junior professionals or on a rotating basis by the six major statistical agencies. Suggested topics for such seminars include the following:

(a) how to do a needs assessment

(b) how to choose a study or survey method in light of objective(s) and data need(s)

(c) how to design statistical survey questions and questionnaires

(d) how to design statistical survey methodology (several seminars)

(e) how to design reliability and validity studies and quality checks

(f) how to analyze statistical data—analytic techniques (several seminars)

(g) how to use a computer for analytic purposes

(h) how to write a statistical report/(several seminars)

(i) how to write an RFP

(j) how to monitor a contract

(k) how to negotiate and write contract amendments

(l) how to respond to and prepare budget exercises

(m) how to respond to and prepare planning exercises, and

(n) how to relate statistical activities to needs of specific Federal programs.

Seminars in topics (d) and (f) above could be supplemented by formal university courses to which employees could be sent at agency expenses.

Managers at GS-14 and GS-15 level are not as much in need of in-service training about the technical side of their assignments. Managers in statistical agencies, like managers in almost all fields and agencies, need to develop supervisory skills. There are many kinds of training programs available to meet this need. The Civil Service Commission sponsors programs in Washington and 2-week and longer retreats outside Washington to deliver management training. Such training involves courses in organizational development, team building, and other conventional and innovative management techniques and skills. If participation in such programs leads to better managers, participation should be encouraged by the leadership of the statistical agencies in an attempt to increase productivity and efficiency, and to produce a happier working team.

The recommendations just described are summarized below in a tabular format:

Kind of professional	Grade/salary level	Nature of rotations	Nature of in-service training
Entry	GS-5 and 7	Within agency	Seminars-basics
Junior	GS-9–13	Across agencies	Seminars-applied
Managers	GS-14 and 15	Within agency	Management training

On-The-Job Experience and Exposure.—The most critical period for professional development is at the GS-9–13 level. Junior professionals, to be fully developed professionally, need practical experience in all kinds of applied statistical activities. Beginning early in their career development, junior professionals should be encouraged to attend as observers all kinds of top level working meetings. These meetings should include not only in-house meetings, such as policy staff meetings and long-range planning meetings, but also meetings with program agencies with data needs and external advisory groups to the statistical agency.

Besides attendance as observers, junior professionals should be given a variety of experience in applied statistical activities, such as RFP writing, report writing, and contract monitoring. Such assignments should prove challenging to the individuals and should assist the agency in

broadening its ability to cope with competing deadlines when the necessity arises.

Another kind of on-the-job experience is exposure to new ideas and other agencies' programs and techniques for handling statistical problems. Attendance at professional association meetings in town should be encouraged. The Washington Statistical Society, the Washington, D.C. chapter of the American Statistical Association, has an extensive program of meetings covering the gamut of statistical issues and programs. Its audience is much larger than just the employees of the six major statistical agencies. Perhaps the Washington Statistical Society program could be altered/expanded to fulfill the needs for presentation of certain seminar topics (see in-service training above).

Pre-Service, University-Based Training and Exchange Programs.—It is believed that at present, in many of the colleges and universities in the country, there is an insufficient number of courses and degree programs in statistics which prepare college graduates for work in the Federal Statistical System. In addition, there is lack of a linkage between those universities with developed statistical training programs and the statistical agencies in the Government. The Federal Government might consider funding, on an experimental basis, two or three university-based training programs for undergraduate and graduate students which include a work-study relationship with the Federal Statistical System. This kind of program could attract more fully trained statistical professionals into government service after completion of their education.

In addition, university professors with statistical expertise might spend a year or more in service to the Federal Government, possibly on an exchange basis with top level Federal statisticians. The Census Bureau, NCHS, and NCES have or have had university fellows working for them under one or two year agreements. In addition, the American Statistical Association in cooperation with the Census Bureau has recently applied to the National Science Foundation for funds to finance one-year assignments of university professors and graduate students to work at the Census Bureau on different assignments over a 3-year period.

Description of Steps to be Taken

Program Consolidation.—Since the professional staff training (work-study and rotation) programs of both NCHS and the Bureau of the Census are no longer operational, a new program combining the best components of the two could be designed for use by the six major statistical agencies (the five centers and the Bureau of Economic Analysis).

An analysis should be made, perhaps by an interagency committee of the content and success of the various components of these former programs comparable, and in some ways complementary, curricula for work-study programs should be developed for use by each of the six major statistical agencies.

In addition, the content of the former NCHS weekly seminar series should be reviewed with the intent of designing a professional seminar series for use by each of the six major statistical agencies individually or collectively.

Statistical personnel in major analysis or program agencies which are outside the major statistical agencies might also be included in such work-study programs and seminar series as well as any other in-service training programs for statistical personnel which are begun.

New Initiatives.—Rotation programs within and across the statistical agencies could be reactivated where they are no longer operational and begun where they have never been tried before. Rotations across the statistical agencies might be coordinated by the Statistical Policy Division of OMB to assure a balance within the Federal Statistical System so that a broad set of assignments is assured among various agencies.

Work-study programs for entry level (GS-5 and 7 level) professionals could also be reactivated or begun. And professional series for GS-9-13 level professionals could be designed and fully developed.

The feasibility of embarking on a linkage and/or exchange program with universities which have developed statistical training programs needs to be explored.

Role of Existing or Proposed Interagency Committees and Advisory Bodies.—There are many interagency committees and advisory groups which could assist in the development of the components of a full-scale professional staff training program. The Department of Health, Education, and Welfare has a Career Service Board of Mathematicians and Statisticians which may need to be reactivated. The American Statistical Association (ASA) has advisory committees to

the Statistical Policy Division of OMB and the Bureau of the Census, as well as an advisory group to the U.S. Department of Agriculture (USDA) graduate school. ASA in concert with the American Economic Association (AEA) advises the Statistical Reporting Service of USDA. Also, the ASA has a subsection on Training of Statisticians. Besides the ASA, AEA, and other professional associations advise the Census Bureau and other statistical agencies. NCHS is aided by the U.S. National Committee on Vital and Health Statistics which was mandated by law; and, NCES has the advice of an Advisory Council on Education Statistics, whose establishment was also mandated by law. All of these groups should be consulted in the conceptualization and developmental phases of a full-scale professional staff training program. Each could review the components of proposed work-study programs and the outlines of proposed professional seminar series.

In addition to the advice of these many advisory bodies an Interagency Career Service Board of Statisticians, chaired by the Statistical Policy Division of OMB, with representation of all of the major statistical collection and analysis agencies, the Statistical Policy Division, and the U.S. Civil Service Commission, should be formed. This group could focus full attention on the training needed to foster a technically competent and productive statistical establishment.

Outline and Time Frame.—The thrust of the chapter should not be understood as a mandate to the agencies for the establishment of all of the programs which are proposed herein. Rather, it embodies suggestions to the statistical agencies for programs to aid them in ensuring a technically competent and productive statistical staff, with foresight to the time when many of the leaders of the statistical community today will retire.

If review of the proposals by the agencies and outside observers leads to support for the ideas, the Statistical Policy Division of OMB is prepared to take the lead in developing a full-scale professional staff training program. The first action would be the establishment by OMB of an Interagency Career Service Board of Statisticians. After that group has been formed, its members would concentrate on the design of work-study programs and the development of professional seminar series. It is anticipated that at least 6 months of planning are needed for both of these kinds of programs to draw on past experience and to be creative in designing stimulating and attractive programs.

After programs are fully conceptualized and planned, before full-scale implementation, a period of experimentation seems appropriate. The Interagency Career Service Board could designate: (1) one or more of the major statistical agencies which are willing and interested for experiments with rotation programs at the GS-5 and 7 level, (2) two or more agencies which are willing for experiments with rotations across agencies at the GS-9-13 level, and (3) one or more agencies which are willing for experiments with rotations of managers. Each of these experiments could begin 6 to 9 months after the formation of the Interagency Career Service Board.

Likewise, experimental professional seminar series in one or more agencies could be instituted. Participation, at first, could be open to junior professionals outside of the agency delivering the seminars or limited only to junior professionals in the agency. Open enrollment at first might help each agency decide on the viability and utility of such a program for itself and its own employees.

The success of the experimental rotation programs and seminar series should be evaluated after a full year's experience with them.

The Interagency Career Service Board, with policy guidance from the Statistical Policy Division and the U.S. Civil Service Commission, should investigate the feasibility of linkages with universities with developed statistical training programs for work–study and exchange programs.

Professional staff training programs will help the statistical establishment to continue and maintain the level of expertise currently present in the Federal Statistical System and where necessary, to upgrade the technical skills of the professionals in the statistical agencies. In addition, productivity and overall professional contentment should be increased as professionals are challenged and more fully developed.

Statistical Staffing in the Federal Government

The U.S. Civil Service Commission reported 15,902 full-time professionals and paraprofes-

sionals in the statistical occupational series in the Federal Government, as of December 1974.[4] The occupational series in this count include professional statisticians (the 1530 job series), mathematical statisticians (1529), economists (110), operations research employees (1515), actuaries (1510), and social science analysts (101). The paraprofessionals are known as statistical assistants (the 1531 job series). This number is definitely an undercount of the true number of employees working in Federal statistical programs because not all employees working in Federal statistical programs are in these six occupational series.

The Subcommittee on Census and Statistics of the Committee on Post Office and Civil Service of the U.S. House of Representatives published six biennial reports of the statistical activities of the Federal Government from 1961 to 1971.[5] The 1971 report showed 45,687 employees which equalled 27,499 man-years of effort. The Subcommittee surveyed all agencies listed in *Statistical Services of the United States Government* and/or in the *Federal Statistical Directory*, both OMB publications. Agencies were asked to include temporary and intermittent employees in their counts. This criterion partially explains the much larger estimates by Congress. The second reason for the higher counts is that Congress included all persons employed in statistical work even if their occupational series was not statistical in nature. In fact, in 1971 Congress included all employees of eight organizations, regardless of their job classification. All eight are included in the 38 major statistical agencies which are identified in this Framework.

These congressional reports also listed all agencies, excluding those in the Department of Defense, with reported salary costs of $1,000,000 or more for statistical activities. In 1971, 29 met this criterion. Only 18 of the 29 are also identified as major statistical agencies in this Framework.

As this analysis indicates, not all major statistical agencies (our criterion for being identified as major essentially being total budget and/or manhours of reporting burden imposed on the public) have $1,000,000 or more in salary costs for statistical activities (according to Congress in 1971, only 18 of the 38 did), and 11 agencies with this large an expenditure on statistical personnel are not classified as major statistical agencies in the Framework.

Number of Statistical Personnel in the Federal Government.—Appendix Table I shows the distribution of the 15,902 full-time personnel by the seven occupational series, by agency and organizational unit within a Department. Appendix Tables II-VIII show the dispersion of personnel in a particular occupational series throughout the Federal Government. These seven tables rank agencies by the number of their employees in a particular series. (Copies of all eight appendix tables are available upon request.)

Seventy-six agencies had one or more statisticians. The Social and Economics Statistics Administration (SESA), which was composed of the Bureau of the Census and the BEA, in the Commerce Department had the most statisticians in December 1974—721 or 33% of the total. The other four agencies with more than 60 statisticians were: the Statistical Reporting Service (SRS) in USDA (395); the Health Resources Administration (HRA) of which NCHS is a part, in DHEW (146); the Department of Labor, which includes BLS, (91); and the Internal Revenue Service in Treasury (81). The Office of Education (OE), which included NCES, was 15th in the number of statisticians, only having 21. The five major statistical centers—SRS in USDA; the Census Bureau, here represented by all of SESA; NCHS, here represented by all of HRA; NCES, here represented by all of OE; and BLS, here represented by all of the Department of Labor —accounted for 63% of all of the statisticians in the Federal Government.

Forty-nine agencies had all of the mathematical statisticians. The top seven agencies in number of mathematical statisticians in December 1974 overlapped with those with the most statisticians. SESA (composed of the Census Bureau and BEA) in Commerce had 105, SRS in USDA had 40, and the Department of Labor had 34. The two agencies with the most mathematical

[4] U.S. Civil Service Commission, Bureau of Manpower Information Systems, Unpublished Data (December 1974) from the Central Personnel Data File.

[5] U.S., Congress, House, Subcommittee on Census and Statistics of the Committee on Post Office and Civil Service, *1969 Report of Statistical Activities of the Federal Government*, H. Rept. 91–1085, 91st Cong., 2nd sess., 1970, pp. 10–17; *1971 Report of Statistical Activities of the Federal Government*, H. Rept. 92–926, 92nd Cong., 2nd sess., 1972, pp. 12–21.

statisticians were in the Defense Department—Army (132) and Navy (118). The other two in the top seven were both in DHEW—the Social Security Administration (45) and the Food and Drug Administration (34). NCHS in HRA ranked 14th with 15 mathematical statisticians, and NCES in OE ranked 15th with 14. The five major statistical centers accounted for only 25% of all of the mathematical statisticians. The Department of Defense (DOD) alone accounted for 36% of the total.

Economists were even more widely dispersed: they were in 102 agencies. Those with the most economists included only two of the statistical centers—the Labor Department, including BLS (830) and the Census Bureau and BEA in SESA (227). The other agencies with over 200 economists each were the State Department (954), the Economic Research Service in USDA (518), the Army in the Department of Defense (225), and the Domestic and International Business Administration in Commerce (222). The NCHS in HRA and the NCES in OE ranked very low with only 6 and 4, respectively. SRS in USDA had none. The five statistical centers, therefore, employed only 23% of the economists in the Federal Government.

The three auxiliary statistical professions—operations research employees, actuaries, and social science analysts—were in even smaller numbers in the five major statistical centers. The five centers accounted for 1% of the operations research employees, 6% of the actuaries, and 11% of the social science analysts. The Department of Defense had 77% of the operations research employees.

Statistical assistants, the paraprofessional statistical occupation series, were employed in 105 agencies; 34% of them were in the five major statistical centers. The Department of Defense had 23%. The Census Bureau and BEA in SESA had the most (663), followed by Army (445). BLS and the rest of Labor (346), Navy (239) and SRS in USDA (236). These were the only agencies with more than 200 statistical assistants. NCHS and the rest of HRA had 43; NCES and the rest of OE had 15.

In summary, the five statistical centers had the following percentages of the statistical employees in the Federal Government:

TABLE 1. PERCENTAGES OF FULL-TIME STATISTICAL PERSONNEL IN THE FIVE MAJOR STATISTICAL CENTERS, BY OCCUPATIONAL SERIES: DECEMBER 1974

	Percent of the total Federal Gov't.	Percent of the total Federal Gov't (excluding DOD)
Statisticians	63	67
Mathematical statisticians	25	39
Economists	23	24
Operation research employees	1	3
Actuaries	6	8
Social science analysts	11	12
Statistical assistants	34	44

Source: U.S. Civil Service Commission

Distribution of Statistical Personnel in the Federal Government.—Table 2 shows the distribution of statistical professionals (statisticians, mathematical statisticians, and economists), auxiliary statistical professionals (operations research employees, actuaries, and social science analysts), and statistical assistants by Departments with and without statistical centers.

The five major statistical centers are SRS in USDA, the Census Bureau in Commerce, NCES and NCHS in DHEW, and BLS in Labor. This table shows that the Departments without statistical centers (excluding Defense and State) have far fewer statistical professionals andstatistical support employees than those with centers. The number of auxiliary statistical professionals seems independent in this comparison. The Departments with the oldest statistical centers—Agriculture, Commerce, and Labor—have the greatest number of statistical professionals. DHEW with two relatively new statistical centers (NCHS began first, in 1960) has a greater number and proportion of auxiliary statistical professionals.

Table 3 shows the distribution of the seven occupational series of statistical personnel in the 38 major statistical agencies.

TABLE 2. NUMBER OF FULL-TIME STATISTICAL PERSONNEL IN THE FEDERAL GOVERNMENT, BY DEPARTMENTS WITH AND WITHOUT STATISTICAL CENTERS: DECEMBER 1974

Departments/agencies	Statistical professionals (statisticians, mathematical statisticians, economists)	Auxiliary statistical professionals (social science analysts, actuaries, operations research employees)	Statistical support employees (statistical assistants)	Total statistical personnel
With statistical center(s):				
Agriculture	1,440	27	531	1,998
Commerce	1,404	159	730	2,293
Health, Education, and Welfare	686	922	356	1,964
Labor	955	134	346	1,435
Without a statistical center:				
Defense	705	1,799	882	3,386
Housing and Urban Development	123	151	33	307
Interior	190	12	125	327
Justice	49	356	114	519
State	967	59	25	1,051
Transportation	143	96	38	277
Treasury	198	45	208	451
Independent agencies and other	871	557	466	1,894
Totals	7,731	4,317	3,854	15,902

Source: U.S. Civil Service Commission.

TABLE 3. NUMBER OF STATISTICAL PERSONNEL IN THE 38 MAJOR STATISTICAL AGENCIES, BY OCCUPATIONAL SERIES: DECEMBER 1974

	1530 Statistician	1529 Mathematical Statistician	110 Economist	1515 Operations Research	1510 Actuary	101 Social Science Analyst	1531 Statistical Assistant
OMB/Statistical Policy Division [1]	(13)*	.....	(25)*	(8)*	.....	.....	(1)*
USDA/Statistical Reporting Service	395	40	.....	.....	.....	1	236
USDA/Economic Research Service	19	3	518	.....	.....	13	105
Commerce/Bureau of the Census [2] / Commerce/Bureau of Econmic Analysis [2]	721	105	227	1	.....	82	663
HEW/National Center for Education Statistics [3]	21	14	5	8	.....	2	15
HEW/National Center for Health Statistics [4]	146	15	6	3	1	10	43
HEW/Social Security Administration/ including Office of Research and Statistics	56	45	48	3	33	189	75
HEW/Assistant Secretary for Planning and Evaluation [5]	(28)*	(5)*	(30)*	(18)*	(1)*	(182)*	(8)*
HEW/Alcohol, Drug Abuse, and Mental Health Administration	14	5	.....	1	.....	30	7
HEW/Center for Disease Control	30	14	.....	.....	.....	.....	62
HEW/Food and Drug Administration	20	34	.....	16	.....	2	18
HEW/Health Resources Administration (except National Center for Health Statistics) [4]	([4])	([4])	([4])	([4])	([4])	([4])	([4])
HEW/Health Services Administration	34	1	3	6	.....	44	38
HEW/National Institutes of Health	54	31	1	3	.....	7	73
HEW/National Institute of Education	....	....	1	.....	.....	.....	.....
HEW/Office of Education [3]	([3])	([3])	([3])	([3])	([3])	([3])	([3])
HEW/Social and Rehabilitation Service	19	2	4	9	.....	354	17

TABLE 3. NUMBER OF STATISTICAL PERSONNEL IN THE 38 MAJOR STATISTICAL AGENCIES, BY OCCUPATIONAL SERIES: DECEMBER 1974—(Continued)

	1530 Statistician	1529 Mathematical Statistician	110 Economist	1515 Operations Research	1510 Actuary	101 Social Science Analyst	1531 Statistical Assistant
HEW/Assistant Secretary for Human Development [5]	([5])	([5])	([5])	([5])	([5])	([5])	([5])
HUD/Policy Development and Research [6]							
HUD/Community Planning and Development [6]	(11)*	(3)*	(109)*	(8)*	(2)*	(141)*	(33)*
HUD/Housing (formerly Housing Production and Mortgage Credit and Housing Management) [6]							
Interior/Bureau of Mines	6	6	31	1	.....	.....	94
DOJ/Law Enforcement Assistance Administration	5	.....	.....	7	.....	30	.....
DOJ/Federal Bureau of Investigation							102
DOL/Bureau of Labor Statistics [7]	(91)*	(34)*	(830)*	(1)*	(5)*	(128)*	(346)*
DOL/Employment and Training Administration [7]							
DOT/National Highway Traffic Safety Administration	.....	4	3	8	.....	.....	.....
DOT/Office of the Secretary	.....	.....	21	17	.....	.....	.....
DOT/Federal Highway Administration	7	6	34	.....	.....	10	11
Treasury/Internal Revenue Service	81	23	20	19	20	.....	164
Treasury/Office of the Secretary (including Office of Revenue Sharing)	1	.....	44	1	1	3	10
Federal Reserve System [8]	.....	.....	.....	.....	.....	.....	.....
Federal Energy Administration	7	7	81	21	.....	3	7
National Science Foundation	3	.....	22	3	.....	47	5
Veterans Administration	42	5	3	6	5	193	163
U.S. International Trade Commission	.....	.....	23	.....	.....	.....	31
Environmental Protection Agency	18	18	54	72	.....	.....	11
Totals (8,522)	1,842	420	2,143	240	68	1,471	2,338

[1] Staffing numbers are given for all of OMB. SPD is but one Division in OMB.
[2] Staffing numbers are shown for SESA which was composed of the Bureau of the Census and BEA.
[3] SeeHEW/NCES. Staffing numbers shown for NCES include OE. NCES used to be part of OE.
[4] See HEW/NCHS. Staffing numbers shown for NCHS include HRA (except NCHS).
[5] See HEW/ASPE. Staffing numbers shown for ASPE include ASPE, ASHD, and other components of OS.
[6] All of HUD is shown together. HUD=PD&R, CPD, H, etc.
[7] All of DOL is shown together. DOL=BLS, ETA, etc.
[8] Data are missing for the Federal Reserve System.
* Part or all of the numbers shown can be attributed to these agencies.
Source: U.S. Civil Service Commission

The percentages of the total Federal Government employment in the seven occupational series in these 38 major agencies are:

Statisticians	84
Mathematical statisticians	50
Economists	46
Operations research employees	11
Actuaries	69
Social science analysts	74
Statistical assistants	61

These numbers can be compared with Table 1 to see the increase which the 33 agencies that are not statistical centers make to the totals. They account for 21 to 27% more of the total in the Federal Government of statisticians, mathematical statisticians, economists, and statistical assistants.

Distribution of Statistical Personnel Within Statistical Agencies.—Data are not available to analyze the distribution of statistical expertise within the statistical agencies. Sufficient statistical expertise should exist at all levels of each organization,

that is, in the central staff to the director, at the division level, and at the branch level.

Number and Distribution of Statistical Personnel in Major Statistical Collection, Analysis, and Program Agencies.—Table 4 shows the number and distribution by type of agency of statistical personnel in 37 of the 38 major statistical agencies (the Statistical Policy Division of the Office of Management and Budget, the general coordinating agency is omitted). At least 10 and probably 12 of the 14 statistical collection agencies have 40 or more statistical professionals (statisticians, mathematical statisticians, and economists). Only the Federal Bureau of Investigation and the Law Enforcement Assistance Administration (LEAA) in Justice have a smaller resource of statistical professionals with none and five, respectively. At least seven and probably nine of the 14 have 40 or more statistical support personnel. Those below this level are the National Center for Education Statistics (NCES) with only 15, Policy Development and Research in HUD (with only 33 for all of HUD), LEAA with none, the Environmental Protection Agency with 11 and the Federal Energy Administration with only seven. These may need more statistical personnel to accomplish their missions. The five analytic agencies appear to be appropriately staffed with professional expertise.

TABLE 4. NUMBER OF STATISTICAL PERSONNEL IN 37 OF THE 38 MAJOR STATISTICAL AGENCIES, [1] BY TYPE OF AGENCY: DECEMBER 1974

	Statistical professionals (1530, 1529, 110)	Auxiliary statistical professionals (101, 1510, 1515)	Statistical support employees (1531)
Statistical collection:			
USDA/Statistical Reporting Service	435	1	236
Commerce/Bureau of the Census [2]	1,053	83	663
HEW/National Center for Education Statistics [3]	40	10	15
HEW/National Center for Health Statistics [4]	167	14	43
HUD/Policy Development and Research [5]	(123)*	(151)*	(33)*
Interior/Bureau of Mines	43	1	94
DOJ/Federal Bureau of Investigation	...	...	102
DOJ/Law Enforcement Assistance Administration	5	37	...
DOL/Bureau of Labor Statistics [6]	(955)*	(134)*	(346)*
DOL/Employment and Training Administration [6]	([6])	([6])	([6])
Treasury/Internal Revenue Service	124	39	164
Environmental Protection Agency	90	72	11
Federal Energy Administration	95	24	7
Federal Reserve System [7]	([7])	([7])	([7])
Analysis:			
USDA/Economic Research Service	540	13	105
Commerce/Bureau of Economic Analysis [2]	([2])	([2])	([2])
HEW/Social Security Administration/ including Office of Research and Statistics	149	225	75
HEW/Assistant Secretary for Planning and Evaluation [8]	(63)*	(201)*	(8)*
DOT/Office of the Secretary	21	17	...
Program:			
HEW/Alcohol, Drug Abuse, and Mental Health Administration	19	31	7
HEW/Center for Disease Control	44	...	62
HEW/Food and Drug Administration	54	18	18
HEW/Health Resources Administration (except National Center for Health Statistics) [4]	([4])	([4])	([4])
HEW/Health Services Administration	38	50	38
HEW/National Institutes of Health	86	10	73
HEW/National Institute of Education	1	...	...
HEW/Office of Education [3]	([3])	([3])	([3])
HEW/Social and Rehabilitation Service	25	363	17
HEW/Assistant Secretary for Human Development [8]	([8])	([8])	([8])
HUD/Community Planning & Development [5]	([5])	([5])	([5])

TABLE 4. NUMBER OF STATISTICAL PERSONNEL IN 37 OF THE 38 MAJOR STATISTICAL AGENCIES, [1] BY TYPE OF AGENCY: DECEMBER 1974—(Continued)

	Statistical professionals (1530, 1529, 110)	Auxiliary statistical professionals (101, 1510, 1515)	Statistical support employees (1531)
HUD/Housing (formerly Housing Production and Mortgage Credit and Housing Management) [5]	([5])	([5])	([5])
DOT/Federal Highway Administration	47	10	11
DOT/National Highway Traffic Safety Administration	7	8	...
Treasury/Office of the Secretary (including Office of Revenue Sharing)	45	5	10
National Science Foundation	25	50	5
U.S. International Trade Commission	23	...	31
Veterans Administration	50	204	163

[1] Excluded is the Statistical Policy Division of the Office of Management and Budget.
[2] See Commerce/Bureau of the Census. Figures for Commerce/SESA which included the Bureau of the Census and BEA are shown under the Bureau of the Census.
[3] See HEW/NCES. Figures for both HEW/NCES (which used to be part of OE) and OE are shown under HEW/NCES.
[4] See HEW/NCHS. Figures for both HEW/NCHS (part of HRA) and HRA (except NCHS) are shown under HEW/NCHS.
[5] See HUD/PD & R. All of HUD is shown under PD&R. HUD includes PD&R, CPD, H, etc.
[6] See DOL/BLS. All of DOL is shown under BLS. DOL includes BLS, ETA, etc.
[7] Data are missing for the Federal Reserve System.
[8] See HEW/ASPE. Figures for all of the HEW/Office of the Secretary are shown under HEW/ASPE. OS includes ASPE, ASHD, etc.
* Part or all of the numbers shown can be attributed to these agencies.
Source: U.S. Civil Service Commission

Staffing figures for the five statistical centers and BEA in Commerce were given for fiscal years 1976, 1977 (estimate) and 1978 (estimate) in Special Analysis G, "Principal Federal Statistical Programs," of the *Budget of the U.S. Government—Fiscal Year 1978*.[6] This was the second time that staffing figures were included in this Special Analysis. The numbers in table 5 are much larger than those shown in table 4 for one of the same reasons as those from Congress. Employees in other than statistical occupational series are included. Only full-time permanent positions are shown, however, in the budget figures.

TABLE 5. NUMBER OF STATISTICAL PERSONNEL IN SIX STATISTICAL AGENCIES: DECEMBER 1974 AND 1978

	December 1974 Civil Service Commission	FY 1978 (estimate), Budget of the U.S. Gov't.—FY 1978
USDA/SRS	672	1,303
Commerce/Census Bureau	1,799 [1]	4,091
Commerce/BEA		560
DHEW/NCES	(65)*	191
DHEW/NCHS	(224)*	542
DOL/BLS	(1,435)*	2,372

* Personnel numbers include not only those for the statistical agency but also for the rest of the organization of which it is a component part, i.e., 65 includes all of OE, 224 all of HRA, and 1,435 all of DOL.
[1] Total for Census and BEA.

Distribution of Statistical Professionals by Grade and Length of Federal Service.—In a November 1974 analysis of professional employment in the Bureau of the Census and the Bureau of Economic Analysis, 14.0% of the professionals were in GS-5–7, 44.9% in GS-9–12, 31.7% in GS-13–14, and 9.4% were GS-15 and above;[7] 70.6% of the GS-5–7 professionals were statisticians, mathematical statisticians, or economists; 63.4% of the GS-9–12 professionals; 64.0% of the GS-13–14 group; and 83.3% of the GS-15 and above group. These statistics show that a larger percent of the entry level professionals were statistical professionals or specialists than were those at the GS-9–12 and GS-13–14 levels.

In a January 1975 analysis of GS-14 and above retirements during calendar year 1974 in nine selected agencies (the five major statistical centers, the Bureau of Economic Analysis in Commerce, the Social Security Administration's Office of Research and Statistics in DHEW, the

[6] Executive Office of the President, Office of Management and Budget, *Special Analyses, Budget of the United States Government, Fiscal Year, 1978* (Washington, D.C.: U.S. Government Printing Office, 1977), p. 144.

[7] Barbara F. Reese, "Comments on 'Professional Employment at SESA' Report," unpublished memorandum, Executive Office of the President, Office of Management and Budget, November 14, 1975.

Internal Revenue Service's Division of Statistics in Treasury, and the Federal Reserve) in the Federal Statistical System, it was found that replacements had less formal education (38.0% of the retirees had a masters degree or more compared with only 20.0% of the replacements).[8] Also, fewer replacements majored in economics, mathematics or statistics (70.4% of those retired compared with 64.3% of their replacements). These statistics point to the problem of continuing the level of statistical expertise which now exists in the major statistical agencies.

Level of Skills of Statistical Personnel.—Crude proxies for the technical ability of statistical personnel are educational attainment and major academic discipline. The only data available on this aspect of statistical personnel are those from a November 1974 analysis of professional employment in the Census Bureau and BEA and a January 1975 analysis of retirements from selected statistical agencies.

Only 15.1% of the Census Bureau and BEA professionals majored in statistics or mathematics, another 22.4% majored in economics, totaling 37.6% in one of the three areas. The rest had a wide variety of majors with none comprising over 10% except business and management (11.7%). In contrast, 70.4% of the retirees with a bachelors degree or more majored in statistics, mathematics or economics, that is, the statistical personnel with tenure in the statistical system had a better match between their major field and their career choice.

Only 23.0% of the Census Bureau and BEA professionals had a masters or higher degree. As many as 17.7% of the professionals had less than a bachelor's degree; 38.0% of the retirees had a masters or higher degree, that is, a larger proportion than those in the Census Bureau and BEA in November 1974. Only 6.0% of the retirees had a Ph.D. while 10.0% had less than a bachelor's degree. Again, retirees on the average had a higher educational attainment level than those remaining in the statistical system.

Another index of the skill level of statistical personnel is their repertoire of applied skills. Statistical professionals to be most versatile and ready for management responsibility should have experience in all aspects of statistical programs including design, collection, processing, and analysis of statistical data. Many statisticians are not exposed to this diversity of experience. They are, therefore, limited in their ability to assume management positions and are not fully utilized in that their creative skills have not been fully tested and developed.

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[8] Barbara F. Reese, "Analysis of Retirements in the Statistical System," unpublished analysis, Executive Office of the President, Office of Management and Budget, January 27, 1975.

INTERAGENCY FUNDING

Description of Issues

In the context of Federal statistical programs, interagency funding means the transfer of funds from one Federal agency to another for the performance of data collection, analysis, or a related statistical activity. In each case, there is involvement of one or more sponsor agencies which provide the funds and a performing agency which does the work.

To put the discussion of interagency funding in the proper perspective, one should emphasize at the outset the close relationship between the issues of interagency funding and organizational questions. In recent years, the principal emphasis of efforts at reorganization of Federal statistical activities has been to limit the number of Federal offices directly engaged in statistical operations and to establish an appropriate number of statistical centers to perform statistical operations for all of the other Federal offices. The by-product of such a reorganization effort is an increase in reimbursable funding, that is, an increase in the transfer of Federal funds to the recognized statistical centers. Inversely, the cases in which recognized statistical centers are not heavily engaged in reimbursable programs indicate areas in which the concept of statistical centers has been only partially carried out. For example, the total reimbursable work done by the National Center for Health Statistics (NCHS) in fiscal year 1976 was only $221 thousand.

Another issue to which reimbursable funding has frequently been linked is the role of market demand in the funding of statistical activities. Stated simply, the proposition is that an agency which needs data should pay for them. If an agency is unwilling to pay, there is the presumption that a market principle has demonstrated the need to be of a lower order of priority. There are certain situations where willingness to pay is a legitimate test of priority, but any broad application must confront the nature of the budget formulation process which definitely limits applicability. In short, the budget process tends to specify, in advance, the objects of expenditure and hence to limit the possibilities for setting priorities within broad areas. To exaggerate somewhat, one might quote the old army joke, "Everything which is not compulsory is forbidden."

Another factor which complicates the situation is that many statistical programs are addressed to both agency-specific and general-purpose needs. The market is broader than an identifiable agency and, therefore, willingness to pay does not provide a good measure of the overall need and hence the priority of the project.

In spite of all of the above limitations, market demand does have a definite role in shaping the outputs of the Federal Statistical System. Within broader budget constraints there is flexibility for funding some major statistical projects and not funding others. In some of these cases, moreover, the appropriate method of proceeding involves a reimbursable agreement, that is, paying another agency to perform the work.

Existing Situation

Only a small number of agencies perform significant amounts of statistical work for other Federal agencies. Since data collection is more expensive and requires more specialists than data analysis, most of the interagency funding reimburses data collection rather than analytic projects and thus the principal performers are the core collection agencies. The degree of concentration in only three agencies, the Bureau of the Census, the Bureau of Labor Statistics, and the Statistical Reporting Service of the Department of Agriculture, however, is quite striking and may be surprising to those who are used to thinking of the U.S. Federal Statistical System as highly decentralized. When reimbursable situations are included, these agencies account for approximately 40% of the Federal statistical budget. With regard to deciding what data are needed, the system is correctly described as decentralized, but statistical collection is, in fact, quite centralized.

The second possibly surprising fact is the extent to which the functional statistical centers use the core statistical centers as their collecting agents. This practice, in fact, is what leads to highly concentrated statistical operations. The Bureau of the Census, for example, is involved in major data collection projects for the National Center for Health Statistics (NCHS), the National Center for Education Statistics (NCES), the Law Enforcement Assistance Administration (LEAA), and the Department of Housing and Urban Development (HUD). In fiscal year 1977 these four agencies together plan obligations of $28.8 million to the Bureau of the Census for reimbursable projects. Of this total, NCHS estimates obligations of $4.3 million, NCES $0.9 million, LEAA $11.9 million, and HUD $11.7 million. None of these agencies, on the other hand, is engaged to any significant degree as a collection agent for the Bureau of the Census or for any other Federal agencies. These agencies are functional collection agencies only in the sense that their own data collection or collection sponsored by them is multipurpose in nature. The Bureau of Mines does function as a collection agent for energy and minerals data although the volume of work performed on a reimbursable basis is a great deal less than that performed by the Bureau of the Census, the Bureau of Labor Statistics, and the Statistical Reporting Service. The total estimated 1977 obligations to the Bureau of Mines for reimbursable statistical work amount to $0.5 million; whereas, the Bureau of Labor Statistics estimates $14.4 million of obligations and the Bureau of the Census estimates $62.7 million in accruals.

In the data analysis area, both the Bureau of Economic Analysis (BEA) and the Economic Research Service (ERS) are engaged in a substantial number of projects on a reimbursable basis. BEA estimates $2.2 million of obligations primarily related to seven separate projects, and ERS estimates $4.0 million related to 16 separate projects in 1976, of which by far the largest are river basin studies and investigations of watershed and flood prevention programs which are sponsored by the Soil Conservation Service. The

Bureau of Labor Statistics also includes data analysis projects in its reimbursable account.

In sum, the Departments of Agriculture, Commerce, and Labor all have established statistical centers which accept a substantial volume of data collection and analysis projects on a reimbursable basis from other agencies both within and outside their own Departments. Outside of this small group of Departments and agencies, however, statistical collection and analysis centers are much less well-established.

Should we be satisfied with the existing practices or should there be further development of statistical centers to perform substantial amounts of reimbursable work for others? In answering this question, we can take at least a brief look at the current constraints to further development. Some of the easily identifiable problems are organizational. The National Center for Health Statistics, for example, is located within the Health Resources Administration, which is a part of the Public Health Service. If the agency were a staff to the Surgeon General/the Assistant Secretary for Health availability for service to all six of the public health agencies rather than a part of one of them, more general use of NCHS as a collection agent for health statistics would be facilitated. Within the Justice Department, where both the Law Enforcement Assistance Administration and the Federal Bureau of Investigation are responsible for major segments of criminal justice statistics, basic issues concerning departmental responsibilities for data collection and analysis need to be resolved before the appropriate role of any Department of Justice agency with regard to reimbursable work can be contemplated. Within the Interior Department, at least with regard to energy and minerals data, the concept of a statistical center performing work for others on a reimbursable basis is well-rooted in the Bureau of Mines and could probably develop further without organizational changes. In addition, the Bureau of Mines does a considerable amount of work for other agencies without charge. Examples are world minerals data sent to the Federal Power Commission and the Departments of State and Defense, and petroleum and coal data sent to the Federal Energy Administration and the Energy Research and Development Administration. This does not, however, imply that the existing organization within the Department of the Interior could not be further improved. The organizational issues are given additional discussion in the Framework in Section II, "The Organization of U.S. Federal Statistics" and in the chapters on individual functional areas. Nevertheless, it seems clear that organizational issues have limited the full development of statistical centers and associated interagency funding of statistical projects.

Lack of adequate staffing of statistical centers has also led to limitations on the extent to which they have been able to perform reimbursable work. The National Center for Education Statistics (NCES), for example, in spite of a favorable organizational location within the Department of Health, Education, and Welfare (DHEW), has a limited pool of expertise because of the small numbers of statisticians and professional employees in closely related fields. (Section IV. E. "Professional Staffing and Professional Staff Training" contains a detailed analysis of employment of statisticians by agency and further discussion of the adequacy of staff resources in fulfilling agency roles and missions.) For this reason alone, NCES is not and cannot now be a major statistical resource available to the other education agencies of DHEW, or to other Departments sponsoring education data collection activities.

Even agencies with substantial numbers of highly qualified professional statisicians, however, may find that their capability to undertake reimbursable work for other agencies is very limited. The reason is that the entire staff may be required to operate the agency's base program. Among the statistical agencies, only the Bureau of the Census, the Bureau of Labor Statistics, and the National Center for Health Statistics have employees whose positions are budgeted exclusively for the performance of reimbursable work. Prior to this year, moreover, NCHS was allowed only 9 positions for reimbursable work. The fiscal year 1977 authorization is 34. The Statistical Reporting Service, in spite of the large amount of reimbursable work it performs, has never been allocated staff explicitly for such work.

It may seem paradoxical that SRS can undertake large amounts of reimbursable work without full-time permanent staff devoted to these projects. It must be recognized, however, that some part of the statistical work for other agencies can be absorbed into the base program of a large statistical center. This limits the need for

staff positions devoted to reimbursable work and in many situations may be the appropriate way to satisfy a given demand. (Appendix I to this chapter discusses the rationale of deciding whether a data collection or analysis project should be handled as a reimbursable project or as part of the base program of the statistical center.)

Recommendations

The preceding sections have focused on the small number of Federal agencies which are currently performing statistical work, either data collection or analysis, for other Federal agencies. The problems in delivery of these services which have been identified and discussed represent the major constraints to the supply of such services. Not surprisingly, therefore, one set of policy recommendations is addressed to removing or reducing these constraints as appropriate.

Recommendation 1.—Further organizational changes as outlined in the chapter on organization and several functional/area chapters, need to be made. Emphasis needs to be placed on revising the role and mission statements of selected agencies with the general objective of assuring that departments have at least one statistical center in each major functional area, that is an office which includes in its mission the performance of statistical work for other agencies.

Implementation of this recommendation would lessen the high degree of concentration of reimbursable work in three agencies which now prevails. More importantly, however, it should contribute to reducing the total number of agencies engaged in data collection on their own account and would, hence, lead to more centralization for the statistical system as a whole. This objective has been generally accepted as desirable and should not have any significant negative consequences if properly executed.

Recommendation 2.—Once organizationally established, all statistical centers must have in-house both program generalists and specialists sufficient for a major base program in at least one functional area. An agency without such a diversified staff cannot become a significant data collection or analysis agent for other agencies. In particular, recommendations in the chapter "Professional Staffing and Professional Staff Training" should be adopted.

The basic argument for insisting that statistical centers have fairly extensive operations is that smaller operations cannot utilize on a full-time basis all the specialists which combine to produce the most professional Federal statistical output. One possible danger, or pitfall to avoid, would be increasing professional staff in anticipation of reimbursable work. One result could be staff underutilization or less than optimal utilization by spending time seeking contracts with other agencies.

Recommendation 3.—Established statistical centers with demonstrable demand for reimbursable services should analyze this demand with a view to justifying new reimbursable positions. Analysis should detail projects which the center has had to refuse because of staff constraints. Important types of information which should be included are: (1) prospective sponsoring agency or agencies; (2) general type and scope of project, for example, data collection, data analysis; (3) periodicity, that is, single-time, continuing; (4) resources required, especially personnel; and (5) functional area, for example, health statistics, education statistics. For continued justification for reimbursable positions already allowed, a similar analysis could be performed with regard to reimbursable work actually being performed by the agency. Both kinds of analysis could make important contributions to assuring that reimbursable positions are in line with effective and legitimate demand for the performance of reimbursable statistical activities. One possible projection to requiring certain statistical agencies to perform such analysis is that it would impose further tasks of budget justification on agencies from which a great deal of analysis is already required.

Recommendation 4.—In contrast to the first three recommendations, which are basically directed at reducing constraints to the supply of reimbursable statistical services, Recommendation 4 is directed toward reducing undue constraints to the demand for such services. In brief, what is called for is analysis of all statistical activity for which an agency pays, but does not perform in-house. In particular, the breakdown among work performed by: (1) private contractor, (2) state or local government, and (3) other Federal agency would be relevant. For group (3), a further break by individual agency would also be relevant. Such analysis could lay the groundwork for discussion with the "buyer" agencies about the current and potential capability of the Federal statistical centers as

"suppliers." To return for a moment to the previous discussion of the market demand aspects of the production and analysis of Federal statistics, one may point out that the flexibility in choosing who is to perform the statistical work may be as great as in deciding what is to be produced. A major challenge would be to identify changes which would make the statistical centers more competitive as suppliers.

Steps to be Taken

Specific steps on organization and staffing recommendations are contained in other chapters. Implementation of Recommendation 3 could proceed by including discussion of the proposed analysis on the agenda for spring planning meetings with all or most of the core multipurpose statistical agencies. At that time, details of preparing material specifically for justifying reimbursable positions could be discussed. Reports could be timed so that they would be available during the fall period of budget review.

In implementation of Recommendation 4, preliminary analysis on which "buyer" agencies to contact could be undertaken by the Statistical Policy Division. As already mentioned, some of the major buyers of statistical services are from the core multipurpose statistical collection agencies themselves. Others are from the program collection and analysis agencies. Clearly representative agencies from both groups should be contacted in the implementation of Recommendation 4. Again, early spring planning meetings would provide an appropriate opportunity to raise the issue and detailed reports could be requested for review in the summer prior to submission of agency budget requests.

Appendices

REIMBURSABLE VERSUS BASE-PROGRAM FUNDING

In cases where a statistical agency is planning to produce some output for another agency or agencies, the first operational question is location of the required funds in the budget. If funds are located in the budget of the statistical agency providing service to other agencies, the project essentially becomes a part of its base program and no reimbursement is required. In a technical sense, it is not a reimbursable project at all. Coincidentally, the question of related personnel will disappear as a separate issue. There is, moreover, solid precedent for this type of arrangement. One good example, is the Professional, Administrative, Technical, and Clerical (PATC) survey used to help establish comparability between Federal and private-sector pay. The Bureau of Labor Statistics regularly performs this survey as a part of its base program even though the users are the Civil Service Commission and the Office of Management and Budget. On the other hand, funds for the Annual Housing Survey (AHS) are located in the budgets of the sponsoring agencies, the Department of Housing and Urban Development and the Department of Transportation, rather than in the budget of the service agency, which is the Bureau of the Census.

Although practice varies, a general rationale may be set forth to help in deciding whether a project should be funded in the budget of the sponsor or the service agency. The key elements in making this decision should be: (1) whether the project is single-time or repetitive and (2) whether the number of sponsors is limited, i.e., one or two, or more numerous. The situation may be conveniently summarized by the matrix below:

PROJECT DESCRIPTION

	Single-time	Repetitive
Few Users	a	a or b
Numerous users	a or b	b

a = funding in sponsor-agency budget
b = funding in service-agency budget

Single-time projects for one or two user agencies should generally be funded by them. Single-time projects do not lend themselves well to becoming part of another agency's program and the transfer of funds should be relatively uncomplicated. In contrast, repetitive projects with numerous users should be funded in the base program of the service agency. Because of the predictability of budget requirements, they can become part of a program, and the excessive budgetary fragmentation associated with numerous small transfers will be avoided.

Solutions for the two intermediate cases are not so clear. A single-time project with numerous users might be funded by the service agency to avoid budgetary fragmentation or by a group of sponsors because of availability of funds in line

with their roles and missions. This situation, however, is one which occurs only rarely. The other intermediate situation is the one of a repetitive project with one or two users. Both of the examples previously mentioned (PATC and the AHS) fit into this category. It is practical to handle such a project either as a reimbursable item or as part of the base program of the service agency.

Of course, other factors may enter into the final decision on whether funding should be base program or reimbursable. One of these is the degree of flexibility which the collection or analysis agency has in accepting additional reimbursable work. Unless an agency can get reimbursable positions when needed, the choice between base program and reimbursable funding may be quite limited.

If an interagency transfer of funds is involved, another operational problem, is that of year-specific funding. The transfer of funds from sponsor to service agency generally is made on the basis of cost estimates worked out in advance of performance of the work. Furthermore, with reimbursable work, there is probably some upward bias in the cost estimates. The service agency can return unused funds more easily if costs are overestimated than it can get additional funds if costs are underestimated.

When year-specific funds are returned to the sponsor agency, however, it is sometimes too late in the fiscal year to use them fully, and they ultimately revert to the Treasury Department. Agencies utilizing their own funds are less likely to have unused balances. The one readily apparent solution to this problem, however,—"no-year" funds for reimbursable projects—would create problems greater than the one solved. For example, the accumulation of carryover funds erodes the normal discipline of direct budgeting. In practical terms, an agency can plan ahead for certain projects for which returned funds could be immediately used.

If the reimbursable project involves data collection, another operational question which emerges is whether the sponsor or the service agency should submit a request for clearance to the Office of Management and Budget (OMB). In general, the sponsoring agency should submit the clearance, and be able to defend the contents of the forms even though the service agency may have played a major role in project development. The only exception to this policy is the case of an interagency agreement between an agency whose forms are subject to OMB clearance and an agency whose forms are not subject to such clearance. In such a case the subject agency submits the request for clearance whether it is the sponsor or the collecting agent. (See Transmittal Memorandum No. 2, O.M.B. Circular No. A-40, November 5, 1976.)

RIGHTS AND OBLIGATIONS IN INTERAGENCY FUNDING

In addition to the obvious need for explicit agreement between a sponsor and service agency on project content, cost, and timing, there needs to be a clear understanding concerning several other questions. One such question is the extent of responsibility which the collecting agent should assume for data analysis. To a certain extent, this depends on the preferences of both the sponsor and the collecting agent. The collecting agent should, however, perform at least sufficient analysis to be assured that the product it transfers to the sponsor agency meets its own standards of quality. Furthermore, the sponsor should not request raw, unedited data which do not meet such standards. Of course, with mutual agreement, the service agency can assume further analytic tasks, including data tabulations and calculations of indexes. For later stages of analysis, such as index calculation, the sponsor agency will normally be responsible for the methodology used.

Another question about which there has been some lack of clarity is the extent of proprietary interest of the sponsoring agency. Does the sponsoring agency own the individual records? The answer to this question in a limited sense is, "yes." The sponsoring agency should be able to receive identifiable records if it has a need for them and if all guarantees of confidentiality are fully protected by both collecting and sponsoring agencies and the respondent is informed of the planned transfer of data. (See Confidentiality Chapter.) In the case of data collected from individuals the Privacy Act provisions for disclosure under the routine use procedure must also be adhered to. On the other hand, the proprietary interest of the sponsor agency does not extend so far as to prohibit the collecting agent from using the records to perform a follow-up quality measurement survey on its own account.

A final question needing clarification is the circumstances under which a collecting or ana-

lytic agency should refuse reimbursable work. One such situation occurs when authorized personnel are fully committed to the base program and existing reimbursable work. Existence of reimbursable positions may help to introduce flexibility in this respect and so may the possibility of subcontracting. This latter should, however, only be undertaken with knowledge and consent of the sponsoring agency. Another reason to refuse reimbursable work occurs when the project falls outside the agency's mission. The Statistical Reporting Service in the Department of Agriculture, for example, generally limits its work to projects which have a clear relationship to agriculture or to rural people and development.

Also, recent Presidential policy on reducing Federal reporting has led to restrictions on accepting reimbursable work from State and local government sponsors and a prohibition against accepting reimbursable work from private sponsors.

CURRENT DEVELOPMENTS

DOCUMENTS RELATING TO PRESIDENT CARTER'S REPORTING BURDEN REDUCTION PROGRAM

The following are reprints of documents pertaining to the President's reporting burden reduction program. They include a memorandum from the President and one from the Director of OMB which contained guidelines for implementing the program and ceilings for the number of agency reports.

MEMORANDUM FOR THE HEADS OF
EXECUTIVE DEPARTMENTS AND AGENCIES,
February 16, 1977

As I outlined in the Cabinet meeting on Monday, January 24, I am determined to improve the efficiency and effectiveness of the Executive Branch. As part of this improvement, I place a high priority on reducing the burden which reporting to the Federal Government places upon the American public.

My predecessor launched a program to secure a modest five percent reduction in reporting burden by September 30, 1977. I am dismayed to learn that the executive departments and agencies have made virtually no progress toward the achievement of that goal.

To assure that this matter receives your continuing attention, I want you to assume personal responsibility for the successful fulfillment of this task and for achieving the purposes of the Federal Reports Act as they relate to your agency. You may delegate authority, but any such delegation must be unambiguous and must run directly to yourself.

Please determine personally:

(a) How many reports does my agency receive?

(b) How many can be combined or eliminated?

(c) How can they be simplified?

(d) Can less frequent reports serve adequately?

(e) Can major departments, agencies and sub-agencies share the same report?

I do not look upon the task of reducing the reporting burden on the public as a one-shot campaign. It is a continuing problem. Routine efforts to deal with it will not suffice. You should review your agency's data collection activities to find ways of carrying out your program responsibilities in a manner which will reduce the paperwork burden on the public.

Assess reports now required by law. You should develop recommendations for changes in legislation which might permit further reductions in reporting in the future.

I have assigned to the Director of the Office of Management and Budget responsibility for exercising general oversight over the reporting burden reduction program. When possible, apply to existing forms the OMB restraints on new forms and reports.

I anticipate your wholehearted and enthusiastic support in achieving these goals. I want each of you and your staff to cooperate fully with the Commission on Federal Paperwork, which is pursuing a broad inquiry into matters relating to paperwork generated by Federal agencies and its impact on the public.

Finally, report to OMB by March 31 the goal of your agency for reduction of required reporting which will be achieved by September 30, 1977, plus other recommendations concerning legislation and cooperation with other agencies.

JIMMY CARTER.

(The President subsequently informed Cabinet members that he expected their reports to be submitted on time.)

MEMORANDUM TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS,
February 17, 1977

SUBJECT: President's Reporting Burden Reduction Program

At the direction of the President, I am transmitting the Office of Management and Budget's guidelines for your use in implementing the President's reporting burden reduction program and the Federal Reports Act. I am also enclosing copies of OMB Circular No. A-40 and pertinent transmittal memoranda.

I will be communicating with some of you separately on specific problems relating to the reporting burdens which your agencies place upon the public.

I would appreciate receiving from you the name or names of those persons in the line of delegation of the responsibilities as defined in the President's letter in order that we may deal effectively and promptly with any problems associated with individual requests for clearance, interpretations of OMB Circular No. A-40, and related matters.

For administrative convenience, you may wish to have this information supplied directly to the Clearance Officer, Statistical Policy Division, Office of Management and Budget, Stop 20, Telephone 395-4529.

Sincerely,

BERT LANCE,
Director.

GUIDELINES FOR REDUCING PUBLIC REPORTING TO FEDERAL AGENCIES

I. *Guidelines for Controlling the Number of Reports*

Objective: To control the number of reports used by executive agencies while permitting a degree of flexibility.

A. A ceiling of 4,700 repetitive reports and 600 single-time reports is established for agencies in the executive branch subject to the provisions of the Federal Reports Act (44 U.S.C. 3501–3512).

B. Each department and independent agency has a ceiling on the number of repetitive reports and a ceiling on the number of single-time reports. The ceilings for each department and agency are set forth in Attachment A.

C. The following guidelines come into effect for any department or agency which reaches its ceiling. They will remain in effect until the number of repetitive reports and single-time reports used by the department or agency are reduced to the number in use on June 30, 1976.

(1) No request for clearance of a new report is to be made unless:

(a) the report is *specifically required* by law, or

(b) the report is required to obtain information *specifically requested* by Congress, or

(c) the request for clearance of the proposed new report is accompanied by a request for the elimination of an existing report. The elimination of an existing single-time report is not acceptable as an offset to the introduction of a repetitive report, or

(d) an exception is granted per guideline I-C (3).

(2) No request for clearance for the continued use of an existing report is to be made unless:

(a) the report is *specifically required* by law, or

(b) the request for clearance is accompanied by a request for the elimination of an existing report. The elimination of an existing *single-time* report is not acceptable as an offset to the continued use of a repetitive report, or

(c) an exception is granted per guideline I-C (3).

(3) If the head of a department or agency determines that there is *no* approved report which can be eliminated in order to meet the requirements of C(1) (c) or C(2) (b) above, he may request an exception from these guidelines by certifying his determination to the Director of the Office of Management and Budget. It is intended that this determination, certification, and request for exemption be made by the head of the department or agency and not by any person to whom he has delegated his clearance authority.

(4) If an exemption is granted by the Director, it will apply only to a specific request for clearance. A separate determination, certification, and request for clearance must be made for each case for which an exemption is sought.

D. In some cases one agency collects information on behalf of another. In such a case, if the data collection involves a separate survey, the agency which sponsors the collection of information from the public shall have the data collection included in its inventory of reports and estimated reporting burden.

II. *Guidelines for Reducing Reporting Burden*

Objective: To reduce the burden and public reporting by 7,000,000 hours by September 30, 1977. The reduction is to be achieved in the burden of reporting associated with repetitive reports. The burden of reporting associated with single-time reports is to be no higher on September 30, 1977 that it was on June 30, 1976.

A. Guidelines for agency use in achieving a reduction in reporting hour burden of existing or prospective data collections.

(1) Review the essentiality of the report. Request clearance only for those reports which are essential to policy decisions, program planning, management or evaluation.

(2) Review the practical utility of the information collected. If it is not used for reasons beyond the agency's control, do not collect it even though it may be "needed."

(3) Reexamine use of samples, cutoffs, and similar techniques which can reduce reporting burden. If these techniques are not being used, why can't they be used? If they are being used, can the samples be reduced or cutoff levels raised?

(4) Reexamine the need for frequency of data collection. Would less frequent data collection adequately serve minimum department or agency needs?

(5) Consider the possible use of "short" forms for use by individuals or by small organizations when an inquiry is addressed to a universe or sample containing large organizations, small organizations, and/or individuals.

(6) Address special efforts to a reexamination of the use of information collected by "large burden" programs such as medicare and medicaid, the food stamp program of the Department of Agriculture, and the like. Such special efforts should concentrate on an evaluation of the practical utility of the information collected.

B. Guidelines to be used by OMB in review of requests for clearance.

(1) *Application.*—No request for clearance of a new application form or for the continued use of an existing application form will be granted for forms which contain anything other than the information necessary to determine (1) whether the applicant is eligible to receive the benefit applied for or (2) the amount of benefit to which an eligible applicant is entitled.

When narrative statements are required as part of an application, reporting instructions are to be explicit as to what is needed.

An agency which requires the name or names of project directors/principal investigators (and information on their staffs) as part of an application is required to present a specific justification for such information in its request for clearance under the Federal Reports Act and to describe the consequences of not receiving it.

(2) *Program evaluation.*—Reporting and data collection required for program evaluation must directly contribute to the assessment of the degree to which program goals have been achieved or to the assessment of the effects of programs or their processes or management. Acquisition of large amounts of descriptive data not directly relevant to these purposes is to be avoided.

(3) *Other management reports.*—No report is to be required of an employer of fewer than 100 employees unless the report is specifically required by law or unless the report is consequent to a benefit received.

(4) *Statistical Surveys or reports.*—No statistical program which collects information annually or more frequently shall be designed to produce geographic detail below national totals for the United States unless:

(a) the information is required by law more frequently than would be provided by a census *and*

(b) cannot be obtained from existing administrative records *or*

(c) the data collection is an integral part of a specific Federal-State cooperative program or of a specific Federal-local government cooperative program.

Federal agencies are not to engage in any data collection activities which are not financed wholly by Federal funds, *except* data collection which is undertaken as a consequence of cooperative efforts with State and/or local governments.

It is expected that data collections for statistical purposes will have a response rate of 75%. Proposed data collections having an expected response rate of less than 75% require a special justification. Statistical data collection activities having a response rate of under 50% should be terminated. Proposed statistical data collection activities having an expected response rate of less than 50% will be disapproved.

An agency will make every reasonable effort to assure that no individual and no employer of fewer than 100 is included in more than one of its statistical samples at the same time.

(5) *Data collection for research purposes.*—Data collections for research purposes will be approved only if (1) they test a stated hypothesis or (2) they are part of an investigation designed to discover new facts or principles in a specified area of knowledge. The anticipated benefits expected from the data collection and the consequences of not engaging in the proposed data collection are to be specified.

(6) *Grant-in-aid reporting.*—Grant-in-aid programs are expected to use the uniform grant reporting procedures set forth in FMC 74–7 and OMB Circular Nos. A–110 and A–111. Agencies may ask for less information than is included in the uniform grant reporting procedures, but may not ask for more information unless (1) the additional information is specifically required by law or (2) is specifically required by Congress even though not required by law.

Grant-in-aid reporting shall be required only of the grant recipient. Reports from subgrantees, porjects, or ultimate beneficiaries are not to be required unless specifically required by law or by Congress.

(7) *Exemptions from these guidelines.*—The head of a department or independent agency may request an exemption from any of these guidelines for a particular case. A request for such an exemption may be made only by the head of the department or agency and may not be made by anyone to whom clearance responsibilities may be delegated. A request for exemption must describe why the particular exemption sought is necessary to the proper performance of the department's or agency's functions.

III. *Guidelines for Reducing Reporting Burden Subsequent to September 30, 1977*

Objective: To recommend changes in legislation which would achieve an additional reduction of reporting burden.

A. During FY 1977 identify legislative sources of specific reporting and recordkeeping requirements which the department or agency regards as excessive.

B. Recommend specific changes in legislation which could reduce the excessive reporting or recordkeeping requirement. These recommendations are to be reported quarterly to OMB, beginning March 31, 1977, together with an estimate of the savings in reporting burden which could be secured if the recommendations were enacted.

CEILINGS FOR REPETITIVE REPORTS

Department of Agriculture	721
Department of Commerce	527
Department of Defense	211
Department of Health, Education, and Welfare	850
Department of Housing and Urban Development	260
Department of the Interior	296
Department of Justice	174
Department of Labor	259
Department of State	31
Department of Transportation	273
Department of the Treasury	130
Agency for International Development	20
Energy Research and Development Administration	29
Environmental Protection Agency	56
Executive Office of the President	13
Community Services Administration	11
Federal Home Loan Bank Board	12
Federal Mediation and Conciliation Service	2
Federal Reserve System	12
Foreign Claims Settlement Commission	1
National Foundation on the Arts and the Humanities	20
General Services Administration	49
National Aeronautics and Space Administration	23
National Mediation Board	3
National Science Foundation	56
ACTION	23
Railroad Retirement Board	118
Renegotiation Board	4
Selective Service System	6
Small Business Administration	22
Smithsonian Institution	9
Tennessee Valley Authority	20
U.S. Civil Service Commission	122
U.S. Commission on Civil Rights	1
U.S. Information Agency	9
U.S. International Trade Commission	9
Veterans Administration	283
National Gallery of Art	2
Interim Compliance Panel	0
National Credit Union Administration	6
Overseas Private Investment Corporation	2
Special Action Office for Drug Abuse Prevention	0
American Revolution Bicentennial Administration	5
Committee on Products and Services of Blind and Severely Handicapped	4
Inter-American Foundation	2
Pension Benefit Guaranty Corporation	3
U.S. Postal Service	0
National Academy of Sciences	1

National Center for Productivity	1
Administrative Conference of the United States	1
Commission on Review of National Policy toward Gambling	1
National Commission on Libraries and Information Science	1
Export-Import Bank of the United States	1

CEILINGS FOR SINGLE-TIME REPORTS

Department of Agriculture	40
Department of Commerce	76
Department of Defense	13
Department of Health, Education, and Welfare	235
Department of Housing and Urban Development	23
Department of the Interior	22
Department of Justice	12
Department of Labor	22
Department of State	1
Department of Transportation	53
Department of the Treasury	7
Agency for International Development	2
Energy Research and Development Administration	0
Environmental Protection Agency	14
Executive Office of the President	1
Community Services Administration	1
Farm Credit Administration	0
Federal Home Loan Bank Board	0
Federal Mediation and Conciliation Service	0
Federal Reserve System	0
Foreign Claims Settlement Commission	0
National Foundation on the Arts and the Humanities	6
General Services Administration	1
National Aeronautics and Space Administration	0
National Mediation Board	0
National Science Foundation	9
ACTION	6
Railroad Retirement Board	0
Renegotiation Board	0
Selective Service System	0
Small Business Administration	0
Smithsonian Institution	0
Tennessee Valley Authority	5
U.S. Civil Service Commission	15
U.S. Information Agency	0
U.S. International Trade Commission	21
Veterans Administration	10
National Gallery of Art	0
Interim Compliance Panel	0
National Credit Union Administration	0
Overseas Private Investment Corporation	0
Special Action Office for Drug Abuse Prevention	0
American Revolution Bicentennial Administration	0
Committee on Products and Services of Blind and Severely Handicapped	0
Inter-American Foundation	0
Pension Benefit Guaranty Corporation	2
U.S. Postal Service	0
National Academy of Sciences	2
National Center for Productivity	1
Administrative Conference of the United States	1
Commission on Review of National Policy toward Gambling	2
National Commission on Libraries and Information Science	1

(ROYE L. LOWRY, STATISTICAL POLICY DIVISION, OFFICE OF MANAGEMENT AND BUDGET, telephone (202) 395-3772.)

1977 CENSUS OF GOVERNMENTS

Every 5 years (for years ending in "2" and "7"), the Bureau of the Census conducts a census of State and local governments under the provisions of Title 13, section 161, U.S. Code. Traditionally, the major subject areas covered include:

- Governmental organization—number, characteristics, and descriptions of local governments by type and within each State; data on popularly elected officials (collected only for years ending in "7").
- Taxable property values—assessed valuations, measurable sales and assessment/sales ratios, and data on nominal and effective property tax rates.
- Government employment—number of public employees and payroll amounts for the month of October, extent of employee organization and governmental labor-management policies and agreements, public work stoppages and methods of resolution, and employee retirement coverage.
- Governmental finances—revenues by source and type; expenditures by function, character, and object; indebtedness and debt transactions; and cash and security holdings.

According to the latest census, conducted for the year 1972, there were more than 78,000 independent governments. These employed 10.8 million persons, raised $191 billion in revenue, spent $189 billion, and were in debt for $174.5 billion. By 1975, sample based estimates indicated that employment had increased to 12.1

million, revenues to $262 billion, expenditures to $266 billion and indebtedness to $221 billion.

The 1977 Census of Governments will provide comparable benchmark data for the four subject areas. Reflecting new interests and the recommendations of many data users who participated in planning the 1977 effort, the following will be available for the first time:

— Yearly salary and wage expenditure by function (will be incorporated into the finance reports).

— A new report on State and local government personnel expenditures, including the cost of selected employee fringe benefits (retirement, health and life insurance, etc.).

— A new report on the characteristics, activities and financial transactions of sub-State regional organizations.

It is anticipated the various reports will be published on a flow basis starting in the fall of 1977 through the summer of 1979. (SHERMAN LANDAU, BUREAU OF THE CENSUS, DEPARTMENT OF COMMERCE, telephone (301) 763-7366.)

COUNTY DATA FROM THE 1974 CENSUS OF AGRICULTURE

The Bureau of the Census currently is issuing Volume I of the final reports of the 1974 Census of Agriculture showing 1974 State and county data with comparable figures from the 1969 census. Production and sales data are shown for the year 1974 with inventory (on place) figures as of December 31, 1974. A separate report is being published for each State, the United States, Guam, Puerto Rico, and the Virgin Islands.

For Puerto Rico and the Virgin Islands, production and sales data are for the period July 1, 1974 through June 30, 1975, and inventory figures are as of the date of enumeration, which was during the period July 15 to September 15, 1975.

The report for each State contains data on farms, land in farms and land use; size of farm; tenure and characteristics of farm operators; farm income, expenses, and sales; selected machinery and equipment; inventory and sales of livestock and poultry; crops harvested and value of production; farm payroll and employment; irrigation; artificial drainage; artificial ponds; agricultural chemicals; grain storage facilities; value of products sold; income from other sources; contracts; and value of agricultural products sold by commodity group. Also shown by State are tables of farm characteristics presented by tenure of operator and type of organization, age and principal occupation of operator, size of farm, value of agricultural products sold, and standard industrial classification of farms by value of sales.

The Volume I report for each State contains four chapters as follows:

Chapter I—Nine tables of State data for all farms and 24 tables of State data for farms with sales of $2,500 and over.

Chapter II—Thirty-three tables of county data by subject.

Chapter III—Fourteen tables of county data by subject for miscellaneous crop and livestock items found in relatively few counties.

Chapter IV—Ten tables of county data by county for all farms and five tables of county data for farms with sales of $2,500 and over.

Chapter V—Fifteen tables of county data by county consisting of 10 tables showing data for all farms and five tables showing data for farms with sales of $2,500 and over.

Change in Farm Definition.—The final reports of the 1974 Census of Agriculture show 1974 statistics in accordance with revised minimum criteria for counting an agricultural operation as a farm for census purposes. The last previous revision was for the 1959 census. Three tables provide users with measures of the effect of the change in definition: A table at the end of the introduction; Chapter II, Table 33; and a table that comprises Appendix B.

The Volume I series of reports are being published on a flow basis as the data are tabulated and reviewed. Reports are expected to be available for all States by midyear.

The reports are individually priced by the Government Printing Office as they are submitted for printing. Requests for purchase order forms are available from the Bureau of the Census, Washington, D.C. 20233 or from any Department of Commerce District Office. Requests for additional information should be directed to the Agriculture Division, Bureau of the Census, telephone (301) 763-5230. (ORVIN L. WILHITE, BUREAU OF THE CENSUS, DEPARTMENT OF COMMERCE, telephone (301) 763-5230.)

NCES REPORT ON JOB PLACEMENT SERVICES IN LOCAL EDUCATION AGENCIES

NCES has recently released a report on the second in a series of policy-related surveys, conducted through its Fast Response Survey System (FRSS). The responses from the national sample of 520 local education agencies (LEAs) indicate that 44% of the LEAs are now offering their high school students, dropouts, or graduates formal job placement services. Most of the existing programs are of recent vintage, the majority having been established within the last 5 years. Larger LEAs are about twice as likely as the smaller ones to offer formal job placement services.

About 60% of the LEAs that have programs report that they actively solicit jobs for their clients, students, dropouts, or graduates; however, even in LEAs that operate programs, only a limited number of the potential clients are served. Two-thirds of the programs in operation give job placement services to fewer than four out of ten students with their LEAs and 43% of the programs deliver such services to less than 10% of the dropouts or graduates in their LEAs.

The survey was carried out by WESTAT under contract with NCES. Single copies of the report entitled, *Job Placement Services Provided by Public School Systems in the United States, 1976,* may be obtained from the NCES Fast Response Survey System project officer, Jeanette Goor, NCES, Room 3147, Washington, D.C. 20202. (O. JEAN BRANDES, NCES, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (202) 472-5026.)

CONDITION OF EDUCATION

The National Center for Education Statistics has submitted to Congress its annual report, *The Condition of Education,* the third in a series mandated by the Education Amendments of 1974.

Drawing upon statistics from governmental and nongovernmental sources, the report portrays the American education system within a broad demographic and social context. As stated by the NCES Administrator, Marie D. Eldridge, "The statistics in this report provide some measure of how well the system functions against a backdrop of rising expenditures, declining enrollments, and public concern."

The opening chapter presents trends in population, spending, and public opinion as they relate to the education system. Chapters on elementary/secondary and postsecondary education depict the diversity of learning activities, educational institutions, and populations to be served at each level. Closer examinations of the participants and the educational and social outcomes of schooling are provided in the special emphasis chapters. The final chapter is devoted to public school finance at the elementary/secondary level.

Statistics published for the first time in this report include:

- — time series statistics on family income and race of public and private school students at the elementary and secondary education levels;
- — profiles of the educational attainment of young adults aged 26–34;
- — profiles of the ethnic composition and language usage of the school-age population; and
- — changes in the supply of and demand for teachers.

The report presents data in a chartbook format with interpretive text. Supporting tables are included for each entry and a cumulative index to the series is shown in this latest edition. Copies of *The Condition of Education,* 1977 Edition, are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, for $3.25; stock number 017–080–01678–8. (O. JEAN BRANDES, NATIONAL CENTER FOR EDUCATION STATISTICS, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (202) 472-5026.)

SUPPLEMENTAL SECURITY INCOME STATE AND COUNTY DATA

The Office of Research and Statistics of the Social Security Administration has released *Supplemental Security Income State and County Data, June 1976.*

The report presents data on State and county distribution of federally administered payments to persons receiving supplemental security income in June 1976, in addition to State data on the combined amounts of Federal supplemental security income payments and federally administered State supplementary payments. This issue does not report county data for Massachusetts.

Single copies of *Supplemental Security Income State and County Data, June 1976* (HEW Publication No. SSA 77–11976 are available from the Publications Staff, Office of Research and Statistics, Social Security Administration, Room 1120, Universal North Building, 1875 Connecticut Avenue, N.W., Washington, D.C. 20009. (ROBERT E. ROBINSON, SOCIAL SECURITY ADMINISTRATION, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (202) 673-5209.)

CASELOAD STATISTICS: STATE VOCATIONAL REHABILITATION AGENCIES

The Rehabilitation Services Administration has recently released *Caseload Statistics: State Vocational Rehabilitation Agencies—Fiscal Year 1976.* During Fiscal Year 1976, State rehabilitation agencies served over 1.2 million disabled persons and successfully rehabilitated 303,328 of them into gainful employment. Most of the other persons were still in receipt of services as the fiscal year ended.

The report, composed of tables with text, has been divided into five sections, and includes information on volumes of cases flowing into and out of the vocational rehabilitation process in Fiscal Year 1976, historical caseload trends for ten or more years and a distinction in caseload movement in Fiscal Year 1976 between cases of severely and nonseverely disabled persons. The remaining two sections contain detailed caseload activity within each of ten geographical regions and over 80 State rehabilitation agencies.

Single copies of *Caseload Statistics: State Vocational Rehabilitation Agencies, Fiscal Year 1976* are available from the Division of Monitoring and Program Analysis, Rehabilitation Services Administration, 330 C Street, S.W. Washington, D.C. 20201. (JUDY MILLER, REHABILITATION SERVICES ADMINISTRATION, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (202) 245-0331.)

RECENT LEAA REPORTS

The following are descriptions of recent publications of the Statistics Division of the National Criminal Justice Information and Statistics Service of the Law Enforcement Assistance Administration.

Sourcebook of Criminal Justice Statistics 1975.—This is the third annual edition of the *Sourcebook,* a compilation of criminal justice and related statistics currently available from the publications of a variety of governmental and private agencies. Data included in this compilation are almost exclusively nationwide in scope. With an emphasis on State and local data rather than Federal because Federal criminal justice agencies handle only a small portion of all crime-related transactions. Generally, this volume focuses on the most recent data available in each substantive area of relevance to criminal justice; in some cases data for earlier years have been included in order to provide a basis for determining trends. The data included in the *Sourcebook* are divided into six major sections: Characteristics of the Criminal Justice Systems, Public Attitudes Toward Crime and Criminal Justice Related Topics, Nature and Distribution of Known Offenses, Characteristics and Distribution of Persons Arrested, Judicial Processing of Defendants, and Persons Under Correctional Supervision. Each of the six sections is introduced by some brief comments giving a more detailed overview of the data contained in that section.

Criminal Victimization Surveys in Chicago, Detroit, Los Angeles, New York and Philadelphia: A Comparison of 1972 and 1974 Findings and *Criminal Victimization Surveys in Eight American Cities: A Comparison of 1971/72 and 1974/75 Findings.*—LEAA's crime victim statistics series examines the extent and character of crime through a representative sampling of households and commercial establishments. The Bureau of the Census conducted the interviews for LEAA in approximately 10,100 homes (with 21,000 individuals) and interviewed the operators of 1,600 businesses in each city. For crimes committed against persons, the selected crimes were rape, robbery, assault, and personal larceny; for households, burglary, larceny and motor vehicle theft; and for commercial establishments, robbery and burglary. Focusing on changes in the impact of these selected crimes, most of the discussion in the report concerns differences between 1971/72 and 1974/75 in the victimization rates for the measured crimes by demographic characteristics of the victims. The report also treats changes in the pattern of weapons use in the commission of personal crimes of violence and of the reporting of crimes to the police. Findings from 20 data tables for each city are descriptively analyzed, and a special section gives capsule summaries of the changes observed in the rates of victimization.

Pre-Adjudicatory Detention in Three Juvenile Courts: An Empirical Analysis of the Factors Related to Detention—AR #8 and *Delinquency Dispositions: An Empirical Analysis of Processing Decisions in Three Juvenile Courts—AR #9.*—These reports are the fourth and fifth in a series that addresses issues concerning the processing of juvenile offenders. The first three reports in the series uses data collected from the Denver County (Colorado), the fourth and fifth examines juvenile processing in Memphis-Shelby County (Tennessee), and Montgomery County (Pennsylvania) juvenile Courts as well as those in Denver. These data are perhaps the most comprehensive source of information on juvenile court dispositions now available. The quality of this information makes it possible to assess the importance of variables of two general types—legal and status—in the disposition of juveniles. This report attempts to discover the variables or combinations of variables that most substantially account for the variation in the severity of the dispositions accorded to juveniles by the courts.

Prisoners in Federal and State Institutions, December 31, 1974.—This report presents information on the number and movement of inmates in Federal and State correctional institutions for 1974 and comparisons of the prison population at the end of the years 1971–74. Information on prisoner movement—various types of admissions and departures—is limited to calendar year 1974. The report also examines the size and distribution of the prison population at the national level and, in the case of the State prison population, at regional and State levels as well. The ratio of male to female prisoners is discussed and special attention paid to year-to-year change in the size of the prison population in terms both of the absolute numbers of prisoners and the number of prisoners per 100,000 population in the general civilian population.

Capital Punishment 1975.—Published as part of the National Prisoner Statistics (NPS) program, this publication provides information on prisoners under sentence of death during calendar year 1975. The total number of such prisoners is presented on a national, regional and state basis both for the beginning and end of the year. Inmates are differentiated by age, sex, race, marital status, level of educational attainment, legal status at time of arrest, offense for which sentenced, and duration of stay on death row. The report also gives data on the number of sentences disposed of by means other than execution. It also includes information showing trends in executions during the period from 1930 to 1967 and on events affecting the legal status of capital punishment during 1975.

Single copies of these reports are available from the National Criminal Justice Reference Service, Law Enforcement Assistance Administration, Department of Justice, P.O. Box 24036, S.W. Station, Washington, D.C. 20024. (BENJAMIN H. RENSHAW, LAW ENFORCEMENT ASSISTANCE ADMINISTRATION, DEPARTMENT OF JUSTICE, telephone (202) 376-2622.)

EEOC REPORT ON MINORITIES AND WOMEN IN PRIVATE INDUSTRY, 1974

The Equal Employment Opportunity Commission recently released a report which reviews the job status of minorities and women in the United States for 1974.

Based on Employer Information Reports (EEO-1) from more than 35,000 companies, this report covers some 32 million workers—nearly half the total private, nonfarm workers in the Nation in 1974. This reporting group included 5.2 million minorities and 11.6 million women. Of minorities in private industry in 1974, blacks were 11.1%, Hispanics, 4.3%; Asian Americans, 0.8%; and American Indians, 0.4%. Women accounted for 36.7% of private, reported employment.

Complete with tables, the 32-page report provides information on the race/ethnic group and sex of EEO-1 employees nationwide. Detailed information is available for the 15 largest industries reporting, and for the 15 largest metropolitan areas in the survey—Atlanta, Boston, Chicago, Cleveland, Dallas-Fort Worth, Detroit, Houston, Los Angeles-Long Beach, Minneapolis-St. Paul, Newark, New York City, Philadelphia, Pittsburgh, San Francisco-Oakland, and St. Louis. An analysis of blacks' and women's median weekly earnings in 1974 is also included.

Major findings of the study indicate that, while minorities and women continue to progress toward fuller participation in the mainstream job market, their achievements are still notably limited in certain areas.

The *Equal Employment Opportunity Report—1974* may be ordered from the Superintendent of Documents, U.S. Government Printing Of-

fice, Washington, D.C. 20402 at $1.25 a copy. The stock number is 052–015–00028–6. A limited number of single copies are available without cost from the Publications Unit, U.S. Equal Employment Opportunity Commission, 2401 E Street, N.W., Washington, D.C. 20506. (SARAH LEITER, U.S. EQUAL EMPLOYMENT OPPORTUNITY COMMISSION, telephone (202) 634-6490.)

HANDBOOK ON MIGRATION DATA

For the first time, documentation for the data file on the Continuous Work History Sample is now available. The Bureau of Economic Analysis has just published *Regional Work Force Characteristics and Migration Data: A Handbook on the Social Security Continuous Work History Sample and Its Application.* The volume is designed to help State and local planners concerned with population change, and is of interest to business planners concerned with plant location and marketing.

Regional Work Force Characteristics and Migration Data is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for $5.10, stock number 003–010–00055–4. (DAVID W. CARTWRIGHT, BUREAU OF ECONOMIC ANALYSIS, DEPARTMENT OF COMMERCE, telephone (202) 523-0938.)

CORPORATION INCOME TAX RETURNS

The Internal Revenue Service has recently released the *Preliminary Report, Statistics of Income—1974, Corporation Income Tax Returns* with accounting periods ended July 1974 through June 1975. The report includes statistical estimates of selected income statement, balance sheet, and tax items. The data are classified by industry and, to a lesser extent, by size of total assets.

The estimates are based on approximately 96% of the returns included in the regular Statistics of Income sample. More detailed information from income and balance sheet statements, based on the full sample of returns, will be available in the complete report for 1974 now in preparation.

Copies of the 18-page *Preliminary Report, Statistics of Income—1974, Corporation Income Tax Returns,* may be purchased for 45 cents from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. (JOEL R. STUBBS, STATISTICS DIVISION, INTERNAL REVENUE SERVICE, telephone (202) 376-0102.)

MINERALS AND MATERIALS

The Bureau of Mines recently announced the availability of a report entitled *Minerals and Materials, A Monthly Survey.* This is a monthly publication in which consumption, production, imports, exports, and representative prices are shown for petroleum, petroleum products and natural gas liquids, natural gas, bituminous coal, anthracite and for 12 leading metal mineral commodities. In addition, significant mineral developments for various commodities by State are indicated.

To receive this free publication write to the Editor, Harold R. Millie, Bureau of Mines, Department of the Interior, Washington, D.C. 20241. (ARTHUR BERGER, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR, telephone (202) 634-4770.)

RECENT NSF REPORTS

The following reports have been recently released by the National Science Foundation.

U.S. Scientists and Engineers: 1974 (NSF 76–329) is based on NSF's Manpower Characteristics System, which includes three subsystems. This report pulls together data from these subsystems as well as other science and engineering data emanating from other sources. Detailed statistics are shown on the demographic, educational, and professional characteristics of the two million scientists and engineers in the United States. Special attention has been given to women and minority scientists and engineers wherever possible.

Copies of the report are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 for $1.25, stock number 038–000–00302–0.

"Graduate Science and Engineering Enrollment Up Only 1 Percent in 1976," *Science Resources Studies Highlights* (NSF 77–302), February 4, 1977, reports on the results of the third annual NSF Quick Response Survey. This national survey was conducted early in the academic year 1976–77 and was based on a sample of 1,292 graduate science and engineering departments in 295 Ph.D.-granting institutions, including graduate programs in 78 medical schools. Both master's and doctorate departments were sur-

veyed. The data are shown by area of science, level of study, and enrollment status.

A volume of *Detailed Statistical Tables* for *Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, Fiscal Year 1975* (NSF 77–303), as well as copies of the *Highlights*, are available from the Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550. (CHARLES E. FALK, DIVISION OF SCIENCE RESOURCES STUDIES, NATIONAL SCIENCE FOUNDATION, telephone (202) 634-4634.)

NORTH CAROLINA STATISTICAL ABSTRACT

The 1976 edition of *North Carolina State Government Statistical Abstract* is now available. This third edition contains over 250 tables and charts of pertinent information from State and Federal sources. Data are grouped into six major categories: human resources, natural and agricultural resources, education, economic resources, physical resources, and general government. A supplement called *North Carolina Statistical Guide* is included with each copy of the *Abstract* or may be ordered separately at no charge. The *Guide* is a comprehensive topical inventory of major statistical series available from North Carolina State government. The *Abstract* is published biennially and is available at $5.00 per copy. Please write the Librarian, North Carolina Department of Administration, Division of State Budget and Management, 116 West Jones Street, Raleigh, North Carolina 27603.

HAWAII DATA BOOK 1976

The 1976 bicentennial year edition of *The State of Hawaii Data Book: A Statistical Abstract* has recently been released by Hawaii's Department of Planning and Economic Development.This 312-page, 10th edition has an estimated 32,000 units of data in approximately 3000 statistical series in 334 tables, 26 more tables than the 308 in the 1975 edition. Most of the tables have been revised and updated; some outdated tables have been omitted and new ones added. Copies of the *Data Book* are available at $4 in the Islands and $5 elsewhere, postpaid, by mailing a check, or money order to the State Department of Planning and Economic Development, Information Office, P.O. Box 2359, Honolulu, Hawaii 96804.

FLORIDA STATISTICAL ABSTRACT 1976

The 1976 Edition of *Florida Statistical Abstract* has recently been released. This is the tenth edition in an annual series compiled by the Bureau of Economic and Business Research, College of Business Administration, University of Florida. The *Abstract* provides data on the social, political, and economic organization of Florida. Copies ($9.75 paper, $15.00 cloth) may be obtained from University Presses of Florida, 15 NW 15th Street, Gainesville, Florida 32603.

COINS SUBCOMMITTEE MEETING

The third session of the Subcommittee on Demographic, Housing, and Related Statistics of the Committee on Improvement of National Statistics (COINS) was convoked by the Executive Committee of the Inter-American Statistical Institute (IASI) and held in Washington, D.C., March 15–22, 1977. This session took place under the auspices of IASI with the collaboration of the General Secretariat of the Organization of American States (OAS).

The agenda included: Information on the activities carried out in connection with the population and housing census taken under the Program of the 1970 Census of America (COTA-1970); formulation of draft standards for the population and housing censuses to be taken under the Program of the 1980 Census of America (COTA-1980)—the pertinent proposal will be submitted to COINS for its consideration; and other matters, including the occupational classification, classification of economic activities, classification of education, technical cooperation for the 1980 population and housing censuses and future activities of the Subcommittee.

As in previous occasions, the national statistical offices of the American countries and some international organizations were invited to be represented by observers at the session.

The report of the session will be submitted to the Committee on Improvement of National Statistics at its XIII Session, scheduled to be held in Santo Domingo, Dominican Republic, in the second half of 1977. (TULO H. MONTENEGRO, SECRETARY GENERAL, INTER-AMERICAN STATISTICAL INSTITUTE, telephone (202) 381-8207.)

NEW REPORTING PLANS AND FORMS

The following listing gives brief descriptions of a selected group of new reporting plans and forms approved between February 3 and February 28, 1977 by the Office of Management and Budget under the provisions of the Federal Reports Act. The description refers to surveys and data collection programs which are just being started or are soon to be started so results are not yet available.

Department of Agriculture

Forest Service

National Assessment of Wildlife and Fish—State Estimates of Trends in Use and Populations (singletime).—This survey will take place in the 50 states, and will partially fulfill the requirements of Public Law 93–378 (The Forest and Rangeland Renewable Resources Planning Act of 1974). An assessment of renewable resources, to be published in 1979, will include State estimates of fish and wildlife populations and trends, both historical and current. While some of the necessary information is already collected annually by the Federal Government (the numbers of animals and fish harvested and the number of hunting and fishing licenses sold) this survey will supplement that data by interviewing State biologists to obtain estimates of fish and wildlife populations. (For further information: DENNIS L. SCHWEITZER, FOREST SERVICE, DEPARTMENT OF AGRICULTURE, telephone (202) 447-5663.)

Statistical Reporting Service

List Sampling Frame Survey (annual).—With funds appropriated by Congress, the Statistical Reporting Service is developing a list sampling frame in each of the State Statistical Offices covering the 50 states. The objective is to develop as complete a list as possible of farmers in each State including associated control data for use in stratification. This will permit the selection of smaller probability samples, thus reducing respondent burden. (For further information: HENRY J. POWER, STATISTICAL REPORTING SERVICE, DEPARTMENT OF AGRICULTURE, telephone (202) 447-8671.)

OTHER REPORTING PLANS AND FORMS

Shown below, by agency, is a list of *new* forms approved between February 3 and February 28 1977 excluding those described above. Requests for copies of these reports should be addressed to the public reports clearance officer of the sponsoring agency. A list of agency clearance officers may be obtained by writing to Marsha Traynham, Statistical Policy Division, Office of Management and Budget, Washington, D.C. 20503.

During February approximately 32 forms reached their expiration dates and are no longer approved for use.

DEPARTMENT OF AGRICULTURE
Subscription Renewal Notice (report evaluation questions)
On-Farm Grain Storage Survey (Kansas)

DEPARTMENT OF COMMERCE
(Part of 1980 Decennial Census of Population and Housing) Precanvass Address Register—1977 Census of Oakland, California

Applicant Information, Selection Aid Validation Study
Survey of Swine Flu Immunization
Broadwoven Fabrics (except knit) Average Weight and Width Study
Census of Wholesale Trade, Retail Trade and Service Industries
Residence Verification, Referral 2, 1977 Census of Oakland, California
Advance Letter to "Special Places"—1977 Census of Oakland, California (1980 Census Pretest)
Impact of Energy and Severe Weather
Pretest: (A) Request for Employee Address Report and (B) Local Public Works Employee Survey
Public Works Project Impact Questionnaire
Agency Impact Survey of State Purchasing Officials

DEPARTMENT OF DEFENSE

Reserve Forces Attitude Survey
ROTC Survey Interview Schedule
Army Advertising Awareness and Attitude Survey
U.S. Navy Paid Broadcast Media Mix and Media Weight Attitude and Awareness Study
Application for U.S. Government Bill(s) of Lading/Domestic Route Order/Export Traffic Release

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Assessment of Educational Programming Needs
Nominations for the National Advisory Council on Indian Education
Cancer Surveillance and Epidemiologic Studies Data Collection Forms
Morbidity and Mortality Patterns Among Shale Oil Workers
Applicant Evaluation Health Record Administration Training
Survey of the Use of Videotechnology to Teach Interpersonal Skills
Statement for Determining Continuing Eligibility for SSI Payments
Evaluation of Effects of Title XX on Clients
1977 Recipient Characteristics Survey
Evaluation of the Process of Mainstreaming Handicapped Children Into Head Start
Intake and Service Summary Form
Annual Evaluation of the Education and Training in Team Programs

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Survey of Rehabilitation Financing Activities Under the Community Development Block Grant (CDBG) Program
Post Occupancy Assessment Questionnaire and Post Occupancy Assessment Fact Sheet
Application for Section 115 Rehabilitation Grant
Request for Verification of Mortgage or Deed of Trust
Request for Rehabilitation Loan Check—Rehabilitation Loan Program
Application for Rehabilitation Loan—Owner-Occupied Property Containing One-to-Four Dwelling Units
Request for Verification of Deposit—Rehabilitation Loan and Grant Programs
Request for Verification of Employment—Rehabilitation Loan Program
Application for Rehabilitation Loan—Investor Owned Residential Property or Mixed-Use Loan
Personal Financial Statement
Request For Approval of Advances For Nonpermanently Financed Projects
Nonprofit Hospital—Section 242—Application for Project Mortgage Insurance
Claim for Payment of HUD Security Deposit Guarantee and Compensation for Vacancy Loss
Schedule of Amounts for Contract Payments
Analysis of Proposed Main Construction Contract
Determination of Minimum Development Cost
Application for Project Mortgage Insurance
Home Builders Profile Survey
Single-Family Default Counseling Referral, Screening, and Status Record
Tax Factors of Rental Housing

DEPARTMENT OF THE INTERIOR

Application for Permit and Agreement for Outer Continental Shelf Exploration—Geological Geophysical
Underground Coal Mining Recovery
Transfer of Ownership: Threatened Species

DEPARTMENT OF LABOR

Report of Activities Related to Expanded Public Service Employment Program
Transit Management Questionnaire and Transit Union Questionnaire

AGENCY FOR INTERNATIONAL DEVELOPMENT

Education/Employment/Reference Inquiry

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

Solar Energy Manpower
Combustion and Advanced Power Technologies Commercialization Study

ENVIRONMENTAL PROTECTION AGENCY

Chlorine Dioxide Questionnaire
Survey of Phosphorus-Laden Sludge Management

GENERAL SERVICES ADMINISTRATION

Statement of Witness

NATIONAL SCIENCE FOUNDATION

Application for National Science Foundation Public Service Science Residencies and Internships

ACTION

Employer Job Order Form from Outplacement Counseling

U.S. INTERNATIONAL TRADE COMMISSION

Retailers' Questionnaire—Textile and Textile Products
Producers' Questionnaire—Textile and Textile Products
Importers' Questionnaire—Textile and Textile Products
Chromium Ferroalloys—Consumers Questionnaire
Chromium Ferroalloys—Importers' Questionnaire

VETERANS ADMINISTRATION

Application for Authority to Close Loans on an Automatic Basis—Nonsupervised Lenders
Nonsupervised Lender's Nomination and Recommendation of Credit Underwriter

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

Photocopying Characteristics Survey—Royalty Payment Mechanism Library Questionnaire

PERSONNEL NOTES

OFFICE OF MANAGEMENT AND BUDGET

Statistical Policy Division, GAYLORD E. WORDEN has been designated Chief of the Economics Statistics Branch. Formerly he was Director, Data Services Center, Economic Research Service, Department of Agriculture.

DEPARTMENT OF COMMERCE

Bureau of Economic Analysis: CAROL S. CARSON, formerly Assistant to the Director, is now Chief, Current Business Analysis Division and Editor-in-Chief of the *Survey of Current Business.* PHILIP A. TUCKER, formerly Special Assistant to the Director, is now Chief Planning and Evaluation Officer.

FEDERAL RESERVE BOARD

Division of Research and Statistics: JAMES E. ANNABLE, JR., formerly an Economist in the Capital Markets Section, has been transferred and promoted to Chief of the Wages, Prices and Productivity Section. MICHAEL J. PRELL, formerly a Senior Economist assigned to the Government Finance Section, has been transferred and promoted to Chief of the Capital Markets Section. STEPHEN S. ROACH, formerly an Economist in the National Income Section, has been promoted to Chief of the National Income Section. LAWRENCE SLIFMAN, Economist in the National Income Section, has been promoted to Senior Economist in that Section. DONALD L. KOHN, Economist in the Government Finance Section, has been promoted to Senior Economist in that Section.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Social Security Administration, Office of Research and Statistics: DANIEL N. PRICE has been designated Acting Branch Chief of the Interprogram Studies Branch, Division of Retirement and Survivor Studies.

DEATH

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Social Security Administration, Office of Research and Statistics: ALFRED M. SKOLNIK, Chief of the Interprogram Studies Branch, Division of Retirement and Survivor Studies, died suddenly March 10, 1977 at age 56 after 27 years with the agency, 12 as Interprogram Studies Branch chief. In 1975 he was awarded the Commissioner's Citation for, among other things, having "demonstrated unique talent in correlating data from a wide variety of sources into a body of knowledge which was succinct and clearly understandable."

SCHEDULE OF RELEASE DATES FOR PRINCIPAL FEDERAL ECONOMIC INDICATORS

May 1977

Release dates scheduled by agencies responsible for the principal economic indicators of the Federal Government are given below. *These are target dates* that will be met in the majority of cases. *Occasionally agencies may be able to release data a day or so earlier or may be forced by unavoidable compilation problems to release a report one or more days later.*

A similar schedule will be shown here each month covering release dates for the following month. The indicators are identified by the title of the releases in which they are included; the source agency; the release identification number where applicable; and the *Business Conditions Digest* series numbers for all BCD series included, shown in parentheses. Release date information for additional series can be found in publications of the sponsoring agencies.

(Any inquiries about these series should be directed to the issuing agency.)

Date	*Subject*	*Data for*
May 2	Manufacturers' Shipments, Inventories, and Orders, Census, M3-1 (65)	March
2	Construction Expenditures (Press release), Census, C-30 (69)	March
3	Open Market Money Rates and Bond Prices, Federal Reserve Board (FRB), G. 13	April
4	Manufacturers' Export Sales and Orders, Census M4-A	March
4	Consumer Credit, FRB, G. 19 (66, 113)	March
4	Condition Report of Large Commercial Banks, FRB, H.4.2 (72, 112)	Week Ending April 27
5	Money Stock Measures, FRB, H. 6 (85, 102, 107, 108)	Week Ending April 27
5	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93, 94)	Week Ending May 4
5	Wholesale Price Index (Press release), BLS (330–334)	April
6	Monthly Wholesale Trade (Press release), Census, BW	March

Date	Subject	Data for
May 6	The Employment Situation (Press release), Bureau of Labor Statistics (BLS) (1, 21, 37, 40–44, 91, 340, 441, 442, 444–448, 451–453)	April
10	Advance Monthly Retail Sales (Press release), Census (54)	April
11	Condition Report of Large Commercial Banks, FRB H.4.2 (72, 112)	Week Ending May 4
12	Money Stock Measures, FRB, H.6 (85, 102, 107, 108)	Week Ending May 4
12	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93, 94)	Week Ending May 11
16	Yields on FHA Insured New Home 30-year Mortgages, HUD (118)	May 1
16	Food Assistance Programs Results, Agriculture	March
16	Manufacturing and Trade: Inventories and Sales, Bureau of Economic Analysis (BEA) (31, 56, 71)	March
16	Industrial Production and Related Data, FRB, G. 12.3 (47, 73–76)	April
17	Selected Data on International Transactions of the United States, BEA	1 Q 77
17	Housing Starts (Press release), Census, C-20 (28, 29)	April
18	Personal Income, BEA (52, 53)	April
18	Output, Capacity, and Capacity Utilization, FRB, G.3 (82, 84)	April
18	Condition Report of Large Commercial Banks, FRB, H.4.2 (72, 112)	Week Ending May 11
19	Money Stock Measures, FRB, H.6 (85, 102, 107, 108)	Week Ending May 11
19	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93, 94)	Week Ending May 18
19	Gross National Product (Revised), BEA (200, 205, 210)	1 Q '77
19	Corporate Profits, BEA (16, 22, 68)	1 Q '77
20	Advance Report on Durable Goods, Manufacturers' Shipments and Orders (Press release), Census M3-1 (6, 24, 25, 96, 548)	April
20	Federal Receipts and Expenditures, NIPA Basis, BEA (600, 601, 602)	1 Q '77
20	Consumer Price Index (Press release), BLS (320–322)	April

Date	Subject	Data for
May 20	Real Earnings (Press release), BLS (341)	April
24	Average Yields of Long-Term Bonds, Treasury Bulletin (115, 116)	March
25	Condition Report of Large Commercial Banks, FRB, H.4.2 (72, 112)	Week Ending May 18
26	Money Stock Measures, FRB, H.6 (85, 102, 107, 108)	Week Ending May 18
26	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93, 94)	Week Ending May 25
26	Export and Import Merchandise Trade, Census, FT-900 (602, 612)	April
26	Productivity and Costs in Nonfarm Business and Nonfinancial Corporations, BLS	1 Q '77
27	Labor Turnover in Manufacturing (Press release), BLS (2, 3, 4)	April
27	Work Stoppages (Press release), BLS	April
27	Composite Indexes of Leading, Coincident, and Lagging Indicators (Press release), BEA	March-April
31	Defense Indicators, BEA (525)	April
31	Agricultural Prices, Agriculture	Mid-May

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price 85 cents (single copy). Subscription Price: $9.70 domestic postpaid; $3.30 additional foreign mailing.

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	Alternate: Tim Coss	377–4233
Census:	Harold Nisselson	763–2462
	Larry Hartke (news items)	763–7454
BEA:	Ago Ambre	523–0777
	Ann Winkler (personnel notes)	523–0890
Defense:	Rose Glubin, OSD Comptroller	OX 7–0476
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	Arthur Berger, Bureau of Mines (news items)	634–4770
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		Telephone
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BLS:	Henry Lowenstern	523–1327
	Constance McEwen (news items)	523–1660
ETA:	Howard Rosen, Office of Manpower Research	376–7335
	Bernard Rein	376–7356
	Robert Yerger, Office of Research and Development	376–6456
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